UNITED STATES OF AMERICA
Before the
SECURITIES AND EXCHANGE COMMISSION

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ADMINISTRATIVE PROCEEDING
File No. 3-15873

In the Matter of

THOMAS R. DELANEY II and
CHARLES W. YANCEY

Respondents.

FIRST AMENDED PREHEARING BRIEF OF
RESPONDENT THOMAS R. DELANEY II

I. INTRODUCTION

The Division of Enforcement ("Division") brought this case against Respondent Thomas R. Delaney II ("Delaney"), the former Chief Compliance Officer ("CCO") of Penson Financial Services, Inc. ("Penson"), as part of a coordinated media-driven compliance initiative related to temporary Rule 204T(a) and permanent Rule 204(a) of Regulation SHO, 17 C.F.R. § 242.204(a) ("Rule 204T(a)/204(a)"). To try to make a statement to the industry, the Division alleged that, from October 1, 2008 through November 1,2011, Delaney *willfully* aided and abetted and caused Penson, a registered broker-dealer and clearing firm, to "systematically" violate Rule 204T(a)/204(a), with respect to a specific type of transaction the Division terms "long sales of loaned securities."[1] However, the Division has failed to adduce, and will not offer, any credible evidence to support its allegations that Delaney engaged in any wrongdoing.

Rule 204T(a)/204(a), adopted in height of the 2008 financial crisis, is couched in superficially simple language that requires complex and highly technical systems and substantial subject matter expertise to successfully implement and monitor. In simplified terms, Rule 204T(a)/204 (a) governs when a clearing broker-dealer (such as Penson) must deliver equity securities to a registered clearing agency (such as the National Securities Clearing Corporation, or "NSCC") for clearance and settlement. A "fail to deliver" position in a security occurs when a broker-dealer does not have enough shares in its account with the clearing agency for the broker-dealer to satisfy its delivery obligation by the trade date plus three days (T+3). Rule 204T(a)/204(a) requires the broker-dealer to close out a failure to deliver position at the registered clearing agency by borrowing or purchasing shares of like kind and quantity by "no

[1] According to the Division, the phrase "long sale of loaned securities" refers to a situation in which (a) Penson has lent-out shares in a customer margin account; and (b) the customer sells the shares loaned out by Penson in a long sale. (*See* Order Instituting Administrative Cease and Desist Proceedings ("OIP"), ¶3.)

later than the beginning of regular trading hours" on, as applicable here, the third consecutive settlement day following the settlement date (T+6). [2]

Despite the Rule's technical nature, the OIP uses inflammatory language more typical in fraud claims. Specifically, the Division contends that members of Penson's Stock Loan Department instituted a policy and practice of intentionally and consistently violating Rule 204(a) with respect to closing out long sales of loaned securities for financial gain. This "policy" and "practice" is the purported primary violation that the Division must prove.[3]

Delaney's alleged role in the alleged scheme is astonishingly complicated. The Division asserts that Delaney affirmatively assisted this scheme, for financial motive, by willfully supporting Stock Loan in implementing intentionally non-compliant procedures; by intentionally drafting Penson's written supervisory procedures ("WSPs") to omit reference to the "non-compliant" procedures; by creating a "Supervisory System" that would allow the "Senior Vice President of Stock Loan"[4] to remain unsupervised so he could continue the practice of intentionally violating Rule 204T(a)/204(a); and by concealing the "non-compliant" procedures from regulators and Penson's president/CEO, Respondent Charles W. Yancey. In essence, the Division contends that Delaney devoted nearly all of his time and effort as CCO of Penson to further the purported scheme to violate Rule 204T(a)/204(a). Of course, it is also true that all of

[2] Distinguishing between long sales and short sales for purposes of the Rule is itself a difficult task, but the OIP assumes that the relevant transactions here involved long sales and thus that the T+6 timeline applies.

[3] Indeed, as set forth in more detail in the argument, below, when counsel for Delaney repeatedly asked counsel for the SEC's enforcement division to identify even a single transaction that violated the rule, counsel resisted saying that respondents did not need to know "the specific violative trades in order to mount a defense." Thus, the Division of Enforcement has adopted the position that specific trades are not the violations, the policy and practice are.

[4] Michael Johnson settled before the instant OIP was filed without admitting or denying the Division's allegations against him.

the conduct the OIP alleges to try to demonstrate Delaney's duplicity is exactly what one would expect of a CCO who was unaware of any purported illegal practice or policy.

There is no credible evidence to support the Divisions assertions. The trading data shows that the purported policy and practice to violate Rule 204T(a)/204(a) does not exist. Delaney's expert witness, Professor Erik Sirri, who was one of the drafters of Rule 204T(a)/Rule 204(a), has confirmed that Penson timely closed-out all potential long-sales-of-loaned-securities transactions during the relevant period at least 99.32% of the time.[5] Stated otherwise, the evidence establishes that, at most, there was a failure to timely close-out long sales of loaned securities 0.68% of the time, which alone establishes that there was no such policy and practice.

Furthermore, the critical "financial motivation" component of the alleged scheme is also unsupported. To try to support the alleged profit motive, the Division's expert witness, Professor Harris, calculated the purported "benefit" and "gain" to Penson from violating Rule 204T(a)/ 204(a) at approximately $6.2 million. However, Professor Sirri established that the $6.2 million figure resulted from a simple calculation error that caused Professor Harris to overstate the purported benefit by a factor of 100.[6] When the calculation error is corrected, and ignoring the other errors in Professor Harris' analysis, the total "benefit" or "gain" to Penson from the

[5] To make this determination, Professor Sirri relied upon the same methodology employed by the Division's expert witness, Lawrence Harris. Professor Harris did not, however, identify the actual close out rate for long sales of loaned securities in his expert report. A copy of Professor Sirri's Expert Report is attached hereto as Ex. A. A copy of Professor Harris' report is attached hereto as Ex. B.

[6] Professor Harris' calculation error is simple to explain, if not to understand how it could have occurred. In calculating the alleged benefit, Professor Harris treated interest rate percentages as if they were whole numbers, i.e., if one calculated five percent of a number by multiplying the number by the integer 5. In fact, calculating five percent of a number requires multiplying by .05. (*See* Sirri Report, ¶¶74-78.) That he would make such a fundamental error undermines the reliability of any of the conclusions in his report. *See In re H.J. Meyers & Co.*, SEC Release No. 211; AP File no. 3-10140, 2002 WL 1828078, *45-46 (observing that, while *Daubert v. Merrell Dow Pharm., Inc.,* 509 U.S. 579 (1993); *Kumho Tire Co. v. Charmichael*, 526 U.S. 137 (1999), "were decided in the context of admissibility, [] the principle for which they stand—that all expert testimony must be reliable—should apply with equal force to the weight a[n agency] factfinder accords expert testimony.").

purportedly non-compliant practice was at most $62,000—for the entire three year period.[7] By comparison, Penson's Stock Loan department's *daily* revenue during the relevant period was approximately $100,000.

The SEC, then, would have this Court believe that Delaney and a group of co-conspirators with whom he was not close and with whom he shared no financial interest, "willfully" and systematically violated various rules and laws, misled regulators, and lied in public reports, all to augment the Stock Loan department's bottom line[8] by eight-one-hundredths of one percent (.08%).[9] This is what the Division deems "financial motivation." Even if such minute financial considerations could motivate someone, it is hard to imagine how it would have motivated Delaney, whose compensation was not calculated based on Penson's financial performance, much less Stock Loan's. Nor is it plausible that Delaney would shape his entire role as Penson's CCO or jeopardize his entire career in the securities industry to perpetuating a scheme to make Penson $20,000/year, or $77.00/per trading day.

In addition, there is also no credible evidence that Delaney knew of any alleged policy or practice to violate Rule 204T(a)/204(a) for long sales of loaned securities, or that he substantially assisted it in any manner. To the contrary, the evidence will show that Stock Loan members first notified Delaney in February of 2011that they believed Rule 204 allowed them to opt-in to the "penalty box" (under Rule 204(b)) instead of closing out long sales of loaned securities by T+6. Upon being confronted with this issue, Delaney acted reasonably and discharged his duties as

[7] At this point, one week before the Final Hearing is set to commence, the Division has offered no alternative measure of financial motivation or the purported "benefit" to Penson. Any new measure would be immediately suspect and establish that the Division has put a desire to "win" over a desire to determine the truth.

[8] Of course given that Stock Loan was just one – and not even the largest – revenue generating department of Penson, the percentage of Penson's combined bottom line would be even smaller.

[9] Dr. Harris relies on a report provided to him by counsel for Penson in which Penson's counsel reported Stock Loan's revenue at $77,000,000 during the period covered by the OIP.

CCO by escalating the issue to both in-house and outside counsel and informing Stock Loan that their understanding was incorrect.

There is no also no credible evidence that Delaney "caused" any violation of Rule 204T(a)/204(a). The Division has not asserted any theory as to how Delaney caused Penson to violate Rule 204T(a)/204(a) outside of their unsupported aiding-and-abetting theory. Regardless, the evidence will show the Delaney reasonably discharged his duties as CCO and neither caused nor contributed to any violations, even unintentionally.

II. BACKGROUND

A. Delaney's Employment at Penson and Overview of Penson

After a fourteen–year unblemished career as a licensed representative of a number of registered broker-dealers, Delaney became CCO of Penson in July 2008.[10] He served in that role until his resignation in May 2011 to pursue employment elsewhere. During this time period, Penson was one of the nation's largest clearing firms, clearing between one million and 1.4 million transactions each day. Penson was a clearing broker member of the NSCC and a Depository Trust Company ("DTC") participant, which meant that Penson cleared and settled trades for its correspondent broker-dealers. As part of its services to its correspondents and their clients, Penson also provided margin lending and securities lending services. Margin lending allows investors to trade using borrowed funds; securities lending is the service of lending out securities, commonly for the borrower to use in effecting a short sale transaction.

When Delaney assumed the CCO position, Penson faced a number of compliance issues, including the implementation of anti-money laundering procedures and controls. He assumed his role as CCO of Penson to "right the ship" and to bring the company into full compliance with

[10] Delaney joined the Penson family in May 2007 when he became Senior Vice President and Global Compliance Officer for Penson Worldwide, Inc. In July 2008, he left that position and became Penson's CCO.

regulatory requirements on a number of fronts. To achieve this goal, he tripled the size of the compliance department from eight employees to twenty-three in the space of one year. He strengthened the department by hiring personal with strong industry and regulatory experience and placing former regulators in senior compliance positions. He reorganized the compliance department to better utilize the competencies of various staff members and improve responses to regulatory requests. He also "embedded" compliance personnel in almost all of the business units by physically seating them in the units to make them readily available to the units and enable them to identify compliance issues early on. He worked closely with regulators and Penson personnel responding to regulators. None of this happened overnight; perfecting compliance was a constant effort for Delaney's entire tenure.

B. Role of Chief Compliance Officers

Responsibility for a broker dealer's compliance with applicable rules and regulations belongs to its chief executive officer and senior management. See *Sheldon v. SEC*, 45 F. 3d 1515, 1517 (11^{th} Cir. 1995). The role of the compliance department is to advise senior management about compliance and to develop and implement an effective compliance system. The CCO generally provides regulatory and compliance advice about current laws and regulations: "A chief compliance officer is a primary advisor to the member on its overall compliance scheme and the particularized rules, policies and procedures that the member adopts." FINRA Rule 3130.05. A CCO also has responsibility for developing the policies, procedures and guidelines designed to facilitate compliance with securities laws and rules. The standard for policies and procedures is that they should be "reasonably designed" to prevent material violations of applicable securities law. This standard gives broker-dealers the flexibility to tailor policies and procedures to the firm's applicable business model.

A CCO's performance is also measured by a reasonableness standard which does not require perfection in compliance, but instead requires the CCO's behavior be reasonable under the material contemporaneous circumstances, including the size of the firm, the pre-existing and current compliance issues, and the CCO's authority within the firm. Here, when Delaney became CCO, Penson was a very large firm facing serious compliance issues and close regulatory scrutiny. He had no supervisory authority except over compliance personal; that authority rested with each business unit, such as Stock Loans of Buy-Ins. No business unit employee reported to Delaney, and Delaney had no authority to discipline or reprimand any non-compliance personnel. It was with these duties and responsibilities that Delaney confronted the changes brought about by the adoption of SEC Rule 204T in October 2008 and Rule 204 in July 2009.

C. Adoption and Requirements of Rule 204T(a)/204(a)

1. Procedural History

The SEC adopted Regulation SHO in 2004 to govern short selling of securities.[11] Initially, Regulation SHO contained delivery requirements and "close-out" obligations only for certain "threshold securities," or securities experiencing a significant number of failures to deliver. During the 2008 financial crisis, the SEC became concerned about the effect of abusive naked short selling[12] on the stability of U.S. securities markets, including "possible unnecessary or artificial price movements stemming" from such activities.[13]

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[11] Regulation SHO became effective on September 7, 2004 (Securities Exchange Act Release No. 50103 (July 28, 2004), 69 FR 48008 (August 6, 2004).

[12] In a "naked" short sale, the seller does not borrow or arrange to borrow the securities in time to make delivery to the buyer within the standard three-day settlement period. As a result, the naked short seller often fails to deliver the securities to a buyer when delivery is due.

[13] Release 34-58572, 73 FR 54875 (September 23, 2008) ("September Emergency Order").

As a result of these concerns, on September 17, 2008, the SEC adopted Rule 204T of Regulation SHO as an "emergency temporary rule."[14] On October 14, 2008, the SEC adopted temporary Rule 204T as an "interim final temporary rule," with an effective date of October 17, 2008.[15] The Order adopting the temporary rule 204T announced the Rule would expire on July 31, 2009. On July 27, 2009, the SEC adopted Rule 204, with certain modifications, as a final rule; the effective date of permanent Rule 204 was July 31, 2009.[16]

As detailed below, the close-out requirements of Rule 204T/204 substantially departed from the previous close-out requirements of Regulation SHO, including by applying to all "equity" securities, rather than just certain threshold or commonly failing securities, and by imposing significantly compressed time-periods within which close-outs must take place (i.e., from 13 consecutive settlement days after the regular settlement date to 4 days from the trade date, for short sales, or 6 days from the trade date, for long sales). Notably, notwithstanding the significant changes for the industry, Rule 204T and Rule 204 were adopted without the customary notice and comment periods, but were instead made immediately effective.[17]

2. Requirements and Mechanics of Rule 204T/204

Rule 204 is highly technical and complex rule aimed at reducing or eliminating "failures to deliver" in equity securities. The Rule applies to "participant[s] of a registered clearing agency," such as Penson, and requires the delivery of securities to a "registered clearing agency," such as NSCC, for the settlement of sales. However, the Rule is framed in the context of a participant's/clearing member's settlement obligations in the NSCC's continuous net settlement

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[14] *Id.*

[15] Exchange Act Release No. 58733.

[16] Release No. 34-60388.

[17] *See* Exchange Act Release No. 58733, pp. 35-36; Release No. 34-60388, pp. 47-48.

("CNS") system.[18] Hence, Rule 204 applies to Penson's net obligation in a security, i.e., the net number of shares in a security that Penson needs to deliver to the NSCC as a result of Penson's net short or long position in that security in the CNS system on a given settlement day.[19] More specific to this case, Rule 204(a) requires a clearing member like Penson to close out failure-to-deliver positions in CNS resulting from both short and long sales in equity securities by borrowing or buying securities in sufficient quantities to close out those fails at the beginning of regular trading on T+4 (the trade date, plus four days) for short sales, or T+6 (the trade date, plus six days) for long sales.[20]

Rule 204T, when in effect, stated in pertinent part:

> **§ 242.204T Short Sales.**
>
> (a) A participant of a registered clearing agency must deliver securities to a registered clearing agency for clearance and settlement on a long or short sale in any equity security by settlement date, or if a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security for a long or short sale transaction in that equity security, the participant shall, by no later than the beginning of regular trading hours on the settlement day following the settlement date, immediately close out its fail to deliver position by borrowing or purchasing securities of like kind and quantity; Provided, however:
>
> (1) **<u>If a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security</u>** and the participant can demonstrate on its books and records that such fail to deliver position resulted **<u>from a long sale</u>**, **<u>the participant shall by no later than the beginning of regular trading hours on the third consecutive settlement day following the settlement date, immediately close out the fail to</u>**

[18] *See* Exchange Act Release No. 58733, pp.15-16; Release No. 34-60388, pp.20-24; *see also* Sirri Report, ¶46.

[19] *See* Sirri Report, ¶¶10-70, which is incorporated herein in its entirety, for a detailed discussion of the CNS system, and its interplay with and effect on the requirements of Rule 204T(a)/204(a).

[20] *See* Sirri Report, ¶46

> **deliver position by purchasing securities of like kind and quantity**;
>
> * * *
>
> (b) If a participant of a registered clearing agency has a fail to deliver position in any equity security at a registered clearing agency and does not close out such fail to deliver position in accordance with the requirements of paragraph (a) of this section, the participant and any broker or dealer from which it receives trades for clearance and settlement, including any market maker that would otherwise be entitled to rely on the exception provided in § 242.203(b)(2)(iii), may not accept a short sale order in the equity security from another person, or effect a short sale in the equity security for its own account, to the extent that the broker or dealer submits its short sales to that participant for clearance and settlement, without first borrowing the security, or entering into a bona fide arrangement to borrow the security, until the participant closes out the fail to deliver position by purchasing securities of like kind and quantity and that purchase has cleared and settled at a registered clearing agency . . .
>
> * * *
>
> (d) If a participant of a registered clearing agency reasonably allocates a portion of a fail to deliver position to another registered broker or dealer for which it clears trades or from which it receives trades for settlement, based on such broker's or dealer's short position, the provisions of paragraphs (a) and (b) of this section relating to such fail to deliver position shall apply to such registered broker or dealer that was allocated the fail to deliver position, and not to the participant. . . .

17 C.F.R. § 242.204T (second emphasis added).

Permanent Rule 204 closely tracks the requirements of Rule 204T with some exceptions, including the notable addition of the right to "borrow" to close out a failure to deliver position under Rule 204(a), as indicated below:

> **§ 242.204 Close-out Requirement.**
>
> (a) A participant of a registered clearing agency must deliver securities to a registered clearing agency for clearance and

> settlement on a long or short sale in any equity security by settlement date, or if a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security for a long or short sale transaction in that equity security, the participant shall, by no later than the beginning of regular trading hours on the settlement day following the settlement date, immediately close out its fail to deliver position by borrowing or purchasing securities of like kind and quantity; Provided, however:
>
> (1) If a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security and the participant can demonstrate on its books and records that such fail to deliver position resulted from a long sale, the participant shall by no later than the beginning of regular trading hours on the third consecutive settlement day following the settlement date, immediately close out the fail to deliver position by purchasing **or borrowing** securities of like kind and quantity;

17 C.F.R. § 242.204(a) (emphasis added).[21]

Although Rule 204T(a) and Rule 204(a) both required Penson to "immediately close out a failure to deliver position" resulting from a long sale by "purchasing" (under Rule 204T(a)) or by "purchasing or borrowing" (under Rule 204(a)) "securities of like kind and quantity," by market open of T+6, it is important to note that this is not the only way for Penson to close-out a failure to deliver position in accordance with the Rule. Specifically, the purchase or borrow close-out requirements on T+6 only apply "*if* [Penson] has a failure to deliver position at" NSCC as of market open on T+6. *See* Rule 204T(a)/204(a) (emphasis added).

There are a number of ways in which a clearing broker dealer, particularly a large one like Penson, can eliminate a failure to deliver position at NSCC, including by clearing a purchase of shares of the same type by one or more of its correspondent customers, or through other acquisition or reallocation of shares, which would offset Penson's CNS obligations in that share

[21] The provisions of Subsections 204(b) and (d) are unchanged from the cited portions of Rule 204T, and are not repeated here for brevity. The provisions of Subsection 204(e), providing for "pre-fail credit," which has not been cited herein, were also changed from Rule 204T(e). *Compare* 17 C.F.R. § 242.204T(e) *with* 17 C.F.R. 242.204(e).

type and close-out the position.[22] This is merely another way of saying that since Rule 204T(a)/204(a) refers to a clearing member's CNS positions, anything that affects the clearing member's CNS position on an ongoing or "continuous" basis prior to the applicable close-out date can cure the failure to deliver.[23] This close-out process is acknowledged in the adoption release notes to Rule 204(a):

> In determining its close out obligation, a participant may rely on its net delivery obligation as reflected in its notification from NSCC regarding its security delivery and payment obligations, provided such notification is received prior to the beginning of regular trading hours on the applicable close-out date.[24]

Finally, although Rule 204T/204 was adopted "to help further [the] goal of reducing fails to deliver,"[25] the decision to tie the requirement of the Rule to CNS positions may actually defeat this goal where a clearing member purchases shares to try to meet its close-out requirements. A purchase by Penson or by one of Penson's correspondent clients (or their customers) generates a receive in Penson's CNS system <u>three</u> settlement days after the purchase, i.e. a "settlement delay" of three days between execution and settlement of the trade.[26] For example, a purchase to close out a failure to deliver position in a long sale executed before market open on T+6 generally will not cure a failure to deliver position at CNS until T+9, even though the clearing

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[22] *See* Sirri Report, ¶¶10-70, which is incorporated herein in its entirety, for a detailed discussion of the CNS system, and its interplay with and effect on the requirements of Rule 204T(a)/204(a).

[23] *See id.*

[24] Release 34-60388, n. 81; Exchange Act Release No. 58733, n. 46. The accompanying text to footnote 81 further elaborates that a participant is only precluded from offsetting the amount of its failure to deliver position "with shares received *"during the applicable close-out date (i.e., during T+4 or T+6, as applicable).*" Release 34-60388, pp. 15-16.

[25] Release 34-60388, p 1.

[26] Notably, all of the parties' experts acknowledge and agree on this settlement-delay effect. *See* Sirri Report, ¶¶62-67; Expert Report of Lawrence Harris, ¶115; Expert Report of Marlon Q. Paz (submitted by Yancey), pp. 14-15.

member is in full compliance with Rule 204T(a)/204(a).[27] Thus, not only is the Rule in operation inconsistent with its stated purpose, but even persistent failure to delivers can be consistent with Rule 204 compliance.[28] Moreover, the settlement lag creates analytical challenges for the clearing member seeking to comply with the Rule, and makes after-the-fact analysis of compliance, based on review of the CNS reports (as the Division has attempted to do here), prone to error.

3. *Long Sales of Loaned Securities.*

The Division's claims in this case are limited to Penson's purported "systematic" violations of Rule 204T(a)/204(a) with respect to a specific type of transaction, which the Division terms "long sales of loaned securities." The Division does *not* contend in this action that Penson violated Rule 204T(a)/204(a) through "naked" short selling, or with respect to Penson's closing out of short sales or long sales in any other circumstances.

According to the Division, a "long sale of a loaned security" occurs in the following situation: (1) a customer of Penson holds shares in a margin account pursuant to a margin agreement with Penson[29]; (2) Penson loans out, or re-hypothecates, those shares to another broker-dealer with whom Penson has entered into a securities lending agreement; and (3) the margin customer thereafter sells those shares in a long sale. Notably, the re-lending of shares by broker-dealers is not improper in anyway and is very common. Broker-dealers, such as Penson, routinely borrow and re-lend securities held in customer margin accounts, as permitted by

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[27] *See* Sirri Report, ¶¶65-67; Paz Report, pp. 14-15. A similar analysis would be true for a purchase on T+4 or T+5, which, due to the settlement delay, would not close out the failure to deliver position until T+7 or T+8, respectively.

[28] *See* Sirri report, ¶¶65-67.

[29] Penson's customers are largely correspondent brokers. The individual account holder at the correspondent broker is the end customer. For purposes of this brief, and indeed this case, there is no need to make a distinction between Penson's customers (the correspondent brokers) and its customers' customers (the actual owner of the securities).

Section 15c3-3 of the Exchange Act and the customer's margin-account agreement.[30] Generally, if a customer sells shares that are out on loan, the broker-dealer can issue a recall notice to the borrowing counterparty, and the borrowing counterparty will return the shares. If the borrowing counterparty does not return the shares by market open on T+6, a Rule 204T(a)/204(a) close-out obligation may arise, provided Penson has not closed out the position in some other manner prior to T+6 market open as set forth above.

D. Penson's Response to the Adoption of Rule 204T and Rule 204

The evidence will establish that Rule 204T arrived in the midst of massive regulatory examinations at Penson focused on problems that existed long before Delaney took over as CCO. Notwithstanding the environment, in response to the new rule, Delaney ushered in a new regime to get Penson on track and moving toward compliance. Delaney worked with regulators on an ongoing basis to address compliance issues with respect to Reg SHO and Rule 204T/204, from the time he started in 2008 until the time he left in 2011.[31] The evidence presented during this hearing will show, for example, Delaney:

a. Coordinated the revision of the WSPs to reflect the requirements of Rule 204T/204 and establish compliance procedures;
b. Coordinated the implementation of short and long sale reports to identify buy-ins;
c. Assigned compliance personnel to test Penson's Reg SHO Rule 204 Procedures against its actual practices and worked towards improvement as detailed below;

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[30] The process of securities lending allows broker-dealers to fund customer margin accounts, make delivery for other customer short sales, and lend securities to other market participants. Securities lending improves "market liquidity, reduces the risk of failed trades, and adds significantly to the incremental return of investors." *See* ICGN Securities Lending Code of Best Practice (2007).

[31] In the OIP, the Division states that FINRA had been very clear with Delaney that they were going to be "poring over the WSPs with a fine-tooth-comb" with respect to the Rule 1017 application in connection with Penson's acquisition of Ridge Clearing. Subsequent to FINRA's thorough examination of Penson's WSPs, FINRA indicated they were adequate and sufficient as written. (See chart detailing sections of WSPs and corresponding check marks). Based on this approval by FINRA, Delaney acted reasonably in believing the WSPs were up to the standards imposed by FINRA.

d. Coordinated new "Desk Procedures" to deal with short and long sales;

e. Drafted and reviewed field-wide correspondence related to the development of the rules and laying the groundwork for the buy-in /close-out requirements in the developing rules;

f. Escalated challenges appropriately;

g. Sought guidance and authority from outside counsel to assist him in improving actual compliance practices at Penson; and

h. Disseminated outside counsel's advice and where necessary, facilitated direct conversations between business unit leaders and outside counsel.

The evidence will show that the relevant WSP sections, supplements and revisions that address the requirements of Rule 204T/204 were adequate to inform the business unit heads, including Stock Lending and Buy Ins, of the requirements of Rule 204. The evidence will also show that the procedures at Penson in the WSPs, as well as in the desk manuals for individual business units, for complying with Rule 204 were developed by the business unit heads, with input and guidance, as necessary from compliance and legal counsel.

In addition, the business unit heads were provided with sufficient information in addition to the WSPs, about the requirements of Rule 204 in order to understand and comply with its provisions. This includes the total mix of information, including supplemental emails and other communications, both oral and written. For example, Delaney sent an email on August 10, 2009 to Penson employees about the adoption of permanent Rule 204. In the email, Delaney writes: "As adopted, Rule 204 requires that broker-dealers close out most fail positions at the beginning of the first settlement date following the Settlement Date, generally T+4..." Delaney also explained the T+6 close-out requirement for long sales.

As a follow-up to announcement of the requirements of Rule 204T/204 to the Penson business units, the evidence will show that the compliance department performed testing under

Rule 3012 to assess compliance with Rule 204T/204. The testing was performed by compliance employee Eric Alaniz who produced a report sent to the Stock Loan and Buy-In business units. The report, which was dated December 21, 2009, clearly stated that a failure to comply with the T+4 and T+6 close-out requirements is a violation of Rule 204.

The initial 3012 testing showed that in in 112 out of 113 sampled transactions, there was a failure to comply with close-out requirements. However, these results are a misnomer to some extent, as the test measured compliance with the market-open buy-in requirement, and thus did not identify the number of positions that were failing on T+3 that were closed out by market open by some other process, as by borrowing or otherwise. Notably, the report also made recommendations for changes in the procedures of Stock Loans and Buy-Ins—the two departments primarily responsible for Rule 204 compliance—to ensure compliance with Rule 204. Stock Loan and Buy-Ins both responded that they agreed with the report and had drafted and instituted remedial measures.

The evidence will establish that Delaney acted reasonably in addressing compliance issues that arose with respect to Rule 204 and in believing that certain relevant issues relating to compliance with Reg SHO and Rule 204 were improving or being resolved based on representations from the business unit heads who were the subject matter experts. At Penson, the appropriate business unit heads were responsible for drafting measures of remediation that they would implement. Those business heads certified to the compliance department, what measures they were taking in order to remediate the issues, which stated the remedial measures Stock Loans and Buy-Ins would take in response to the 3012 test results:

> The T+4 report has been reviewed and reworked to capture all required accounts per Rule 204... We are manually reviewing fails on the T+4 and T+6 reports to comply with the "close-out" requirements. <u>Since our discussions we have had a high success</u>

> rate at meeting the "close-out" requirement. We will continue to work with the Securities Lending Department to minimize any and all violations. The T+6 report will be reviewed and reworked as necessary for compliance with Rule 204 to ensure that all account(s) that may have been missed in the past are included in the report going forward. Executions are now being done at or before the market open.... The buy in department is working to get all executions to the trading desk in sufficient time to execute, comply with the "close-out" requirements.

Notably, the evidence will show that senior managers in both Penson's Stock Loan and Buy-Ins departments certified their compliance with the remediation measures in the 3012 testing.

Another possible issue regarding Rule 204 compliance again arose in July of 2010 when a Stock Loan employee told a Buy Ins employee that stock loans did not buy-in to close failures to deliver, but would instead allow the security to go into the penalty box. The email exchange indicated that compliance, through Holly Hasty and Eric Alaniz informed both Stock Loan and Buy-Ins that the penalty box was not an acceptable alternative to flatting-out Penson's CNS position in accordance with Rule 204. The evidence will also show that there was further follow-up discussion between Alaniz and both members of Stock Loan and Buy-Ins. Delaney was copied on the emails related to the subject, and the evidence will show that he thought Alaniz's and Hasty's responses resolved the issue. Once again, Delaney acted reasonably under the circumstances by delegating the issue to Hasty and Alaniz in the compliance department who were familiar with Rule 204, and by relying on the managers in the business units to live up to their compliance responsibilities.

The evidence will also show that upon learning that there might be another issue with Rule 204(a) compliance in February of 2011, directly from the Stock Loan business unit head, Delaney immediately escalated the issue to in-house and outside counsel to get clarification on the rule. He passed along the guidance from counsel to subject matter experts in Penson's Buy-In and Stock Loan departments, as well as other members of Penson's Compliance department, and scheduled an "all hands meeting" with outside counsel to address any further questions. Delaney's reactions in this regard are compelling evidence that Delaney had no prior knowledge of the existence or persistence of potential problems with the Stock Loan department closing out transactions in compliance with Rule 204.

Soon after the February 2011 events, Delaney resigned from his position at Penson. However, the Division has alleged that the violative conduct continued. The evidence will establish that Delaney was not able, through clear, direct guidance, to effect a change in the conduct of Stock Loan with regard to Rule 204 compliance. He did not have the authority to discipline or fire any employee who refused to comply with the Rule 204. That the problem persisted after he left demonstrates that he did not "cause" it or substantially assist it in any way that term is commonly understood. Delaney's role as CCO was not a meaningful contributing factor to Stock Loan's allegedly knowing and intentional violations.

III. Legal Standards

The Division has alleged that Delaney, "motivated by financial considerations," willfully aided and abetted and caused Penson's "overarching, intentional practice" and policy to "consistently" or "systematically" violate Rule 204T(a)/204(a) related to failures to deliver on long sales of loaned securities.[32] The Division bears the burden of proof on all of its claims against Delaney.

Additionally, "if adjudicated facts are subject to competing inferences, the Division, as the party with the burden of proof, must establish that its inferences are more plausible than the

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[32] *See, e.g.*, OIP, ¶¶3-7, 10; Division's Memorandum in Opposition to Delaney's Motion for More Definite Statement, p. 4.

respondent's inferences."[33] "If the record equally supports both innocent and culpable inferences, the Division fails in its burden of proof."[34] Furthermore, "[a]n adverse inference may be employed to complete a chain of reasoning on a point partially established by direct evidence, but it cannot be used to fill a void where there is otherwise no evidence."[35]

A. Aiding and Abetting.

"To establish that one respondent willfully aided and abetted the violation of another, the Division must . . . show that the aider and abetter acted with scienter."[36] There are three elements necessary to establish liability for aiding and abetting a securities violation: (1) "a primary or independent securities law violation committed by another party"; (2) "awareness or knowledge by the aider and abettor that his or her role was part of any overall activity that was improper"; and (3) "that the aider and abettor knowingly and substantially assisted the conduct that constitutes the violation."[37] "[T]he three requirements cannot be considered in isolation from one another."[38] "Satisfaction of the [knowledge] requirement will ... depend on the theory of primary liability [,] and ... there may be a nexus between the degree of [knowledge] and the requirement that the alleged aider and abettor render 'substantial assistance.'"[39]

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[33] *See In re H.J. Meyers & Co.*, 2002 WL 1828078 at *29.

[34] *See Id.*

[35] *See Id.; accord Stanojev v. Ebasco Servs. Inc.*, 643 F.2d 914, 923-24 n.7 (2d Cir. 1981) (holding that an adverse inference cannot supply the missing element of a *prima facie* case).

[36] *See Id.* at *28 (citing *Adrian C. Havill*, 53 S.E.C. 1060, 1070 n.26 (1998)).

[37] *See Graham v. SEC*, 222 F.3d 994, 1000 (D.C. Cir. 2000); *Woods v. Barnett Bank of Ft. Lauderdale*, 765 F.2d 1004, 1009 (11th Cir. 1985) ; *Investors Research Corp. v. SEC*, 628 F.2d 168, 178 (D.C. Cir. 1980); *Woodward v. Metro Bank of Dallas*, 522 F.2d 84, 94-97 (5th Cir. 1975); *Russo Sec. Inc.*, 53 S.E.C. 271, 278 & n.16 (1997).

[38] *SEC v. DiBella*, 587 F.3d 553, 566 (2d Cir.2009) (internal citations omitted).

[39] *Id.*

Willfulness is shown where a person intends to commit an act that constitutes a violation.[40]

B. Causing.

Pursuant to Section 21C(a) of the Exchange Act, 15 U.S.C. § 78u-3(a), "if the SEC finds that any person has violated the Act or any rule or regulation thereunder, it may issue a cease and desist order against 'any other person that ... was ... a cause of the violation, due to an act or omission the person knew or should have known would contribute to such violation . . . .'"[41] A respondent who aids and abets a violation also is a cause of the violation under the federal securities laws.[42] However, to establish liability for "causing" in the absence of a finding of aiding and abetting, the Division must prove three elements: (1) "a primary violation"; (2) an act or omission by the respondent that was a cause of the violation"; and (3) that "the respondent knew, or should have known, that his conduct would contribute to the violation."[43]

It has been held that "negligence is sufficient to establish 'causing' liability under Exchange Act Section 21C(a), at least in cases in which a person is alleged to 'cause' a primary violation that does not require scienter."[44] Where scienter is an element of the underlying primary violation, however, the Division cannot rely on negligence to establish causing.[45]

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[40] *Wonsover v. SEC, 205 F.3d 408, 414* (D.C. Cir. 2000); *Arthur Lipper Corp. v. SEC*, 547 F.2d 171, 180 (2d Cir. 1976).

[41] *Howard,* 376 F.3d at 1141 (quoting Section 21C(a) of the Exchange Act).

[42] *See Sharon M. Graham,* 53 S.E.C. 1072, 1085 n.35 (1998), aff'd, 222 F.3d 994 (D.C. Cir. 2000).

[43] *See In the matter of Mohammed Riad and Kevin Timothy Swanson,* Release No. 590, 2014 WL 1571348 *28 (June 10, 2014)*; see also Robert M. Fuller,* 56 S.E.C. 976, 984 (2003), *pet. for review denied* 95 F. App'x 361 (D.C. Cir. 2004).

[44] *Howard,* 376 F.3d at 1142 (quotations and citation omitted).

[45] *See Id.; see also In re H.J. Meyers & Co., Inc.,* 2002 WL 1828078 at *29 (citing cases).

Although Rule 204T(a)/204(a) is a technical rule, the Division's case is not based on a technical rule violation, but rather a purported "overarching, intentional practice" and policy to "consistently" or "systematically" violate Rule 204T(a)/204(a) related to failures to deliver on long sales of loaned securities. Similarly, all of Delaney's alleged conduct in support of the purported primary violations in couched as intentional misconduct.[46] Indeed, the OIP does not use the term "negligent" or any derivative thereof a single time, and does not provide any allegations to support a causing claim that is divorced from its aiding and abetting claim. Instead, the Division references causing only in connection with its allegations of willful aiding and abetting; that, "[a]s a result of the conduct described above, Delaney willfully aided and abetted and caused" the alleged primary violation.[47] Thus, the SEC has proceeded on the basis that because Delaney purportedly aided and abetted the violations, he was also cause of the violations, and therefore must establish scienter to establish its causing claim.[48]

IV. <u>Argument</u>

The Division's claims against Delaney will fail because there is no credible evidence that Delaney willfully aided and abetted and caused the alleged violations of Rule 204T(a)/204(a) with respect to long sales of loaned securities.

[46] *See, e.g.*, OIP, ¶¶7, 8, 29, 31, 38, 39, 42, 47, 53, 60, 66, 68.

[47] *See* OIP, ¶85.

[48] The Division acknowledged as much in its Opposition to Delaney's Motion for Postponement, September 17, 2014, p. 8, by stating "[i]n order to prevail on its *claims* against Delaney . . . the Division need only prove that Delaney had the *requisite scienter* concerning Stock Loan's practice of committing intentional systematic violations relating to long sales of loaned securities." (Emphasis added).

A. Aiding and Abetting.

1. There is No Credible Evidence to Support the Existence of the Alleged Primary Violation.

As indicated above, the alleged primary violation is "Penson's systematic, intentional practice of violating Rule 204(a) on failures to deliver related to long sales of loaned securities."[49] The Division has confirmed on numerous separate occasions that it was solely relying on this purported overarching practice, rather than ad hoc or isolated violations of Rule 204T(a)/204(a), as the primary violation. For example, the Division stated:

> While the individual failures to timely close out failures to deliver on long sales of loaned securities in this matter were violations of Rule 204(a), the Division has *charged the overarching violation of the intentional practice of consistently violating Rule 204(a)*."[50]

Therefore, to establish a primary violation of Rule 204T(a)/204(a), the Division has obligated itself to prove an intentional, overarching and systematic practice to violate Rule 204T(a)/204(a) with respect to long sales of loaned securities.[51]

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[49] Division's Opposition to Delaney's Motion for More Definite Statement, June 19, 2014, p. 5.

[50] Division's Opposition to Delaney's Motion for Postponement, p. 7 (emphasis added); *see also id. See, e.g. Id.* p. 6 ("The Division has alleged that Penson's Stock Loan department instituted a policy and practice of intentionally and consistently violating Rule 204(a) with respect to a particular type of transactions—long sales of loaned securities. (*See, e.g.,* OIP, ¶¶3-5, 22-24.); Division's Opposition to Motion for More Definite Statement, p. 5 ("In sum, Delany does not need detailed trading information to inform him of the charges against him, which are centered on his aiding and abetting Penson's systematic, intentional practice of violating Rule 204(a) on *all* failures to deliver related to long sales of loaned securities."(emphasis added)); Division's Opposition to Respondent Yancey's Motion to Identify Rule 204(a) Violations, September 17, 2014, p. 5 ("Because this case focuses on a systemic, intentional practice of violating Rule 204(a), and Respondents' conduct relating to that practice, the Division need not, has not, and, indeed, may not identify each and every one of the violating trades resulting from the over-arching practice.").

[51] *See Id.* The context in which the Division made these statements is also important. The Division made these assertions in order to resist Delaney's and Yancey's requests for further information (or further time) to identify the purported primary violation.

There will be no credible evidence that such a primary violation occurred. The Division produced an expert report of Professor Harris to try to establish its primary violation theory. Professor Harris engaged in a complicated analysis, buoyed by a number of assumptions, in which he purported to identify approximately 1,700 violations by "security days" from October 1, 2008 to October 31, 2011.[52] The methodology used by Professor Harris is extremely complicated, aside from being based on several unsupportable assumptions and erroneous in several other respects as detailed in the Sirri Report.[53] Given the complexity, any argument that Delaney, a compliance officer, could have or should have independently discovered any purported violations is so tenuous as to border on the absurd.

More important, Professor Harris' report leaves out the glaring fact that Penson closed out the overwhelming majority of long sales of loaned securities during the relevant period. Specifically, using Professor's Harris' methodology for identifying potential long sales of loaned securities for which Penson had an obligation to close out during the relevant period, and correcting for some of Professor Harris' calculation errors,[54] Professor Sirri established that Penson, at most, failed to close out less than 1% of all potential long sales of loaned securities:

> Furthermore, I find that the 1,572 negative CNS positions that Professor Harris identified as alleged violations using his Method II represented only 0.68% of the total number of Penson's CNS net sell settling positions potentially associated with loaned shares over the time period Professor Harris analyzed.[55]

[52] *See* Harris Report, figure 1.

[53] Specifically, to purport to identify Rule 204T(a)/204(a) violations with respect to long sale of loaned securities, Professor Harris used the following steps: (1) identify close of T+5 aged CNS failures to deliver; (2) adjust CNS failures to deliver by the net settling trades on T+6 (if positive); (3) remove short sales from these CNS failures to deliver and try to verify long sales existed in the trade blotter; and (4) attempt to match the remaining CNS failures to deliver with Penson's loan data to determine potential Rule 204(a) violations associated with loaned securities.

[54] For example, Professor Harris forgot to account for the Columbus Day and Veteran's Day holidays, which are not trading/settlement days. *See* Sirri Report, ¶¶79-82.

[55] Sirri Report, ¶93. Using Harris' Method III, the failure to close rate with respect to potential long sale of loaned securities is at most 0.72%.

Stated differently, Penson satisfied its close-out obligations for long sales of loaned securities at least 99.32% of the time.

Indeed, given that many of the assumptions in Professor Harris' methodology as to what is or could be a long sale of a loaned security are unsupportable or potentially flawed, the number is likely significantly smaller still:

> For example, Penson's 10-Ks over this period state that the Company cleared between 1.0 million and 1.3 million equity transactions each day. Further, the data employed by Professor Harris show that there were a total of 83.6 million long sale transactions contained in the trade blotter that could be potentially associated with loaned shares over the time period that Professor Harris analyzes. **Out of these 83.6 million long sale transactions, I find that only 0.12% could be potentially associated with a negative CNS position that was identified by Professor Harris as an alleged Rule 204(a) violation using his Method II. In other words, only approximately 1 out of 800 long sale trades potentially associated with loaned shares contributed to a Rule 204(a) violation as identified by Professor Harris**.[56]

Although these numbers were apparent from Professor Harris' data and methodology, the Division presumably chose not to present them in Professor Harris' report because they defeated the Division's theory in this case. The Division instead chose to characterize less than 1% failure rate as a systematic policy and practice of failure. When the actual rate at which Penson was closing out long sales of loaned securities is considered, it is impossible to believe that Penson "instituted a policy and practice of intentionally and consistently violating Rule 204(a) with respect to a particular type of transactions—long sales of loaned securities."[57]

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[56] Sirri Report, ¶92 (emphasis added).

[57] Division's Opposition to Delaney's Motion for Postponement, p. 6.

The Division will not be able to offer credible evidence to establish the primary violation it alleges for an independent, yet equally glaring, reason. As indicated, the Division has couched the purported primary violation as an "intentional" scheme to violate Rule 204T(a)/204(a), motivated by profit or "financial considerations."[58] To try to support its for-profit theory of intentional misconduct, the Division engaged Professor Harris to analyze the purported "benefit" that "Penson obtained by failing to meet the Long Sale Close-Out requirements when it had lent out the securities."[59] Professor Harris concluded that, during the relevant period of October 1, 2008 to October 31, 2011, the benefit to Penson from the Rule 204T(a)/204(a) violation was approximately $6.2 million.[60]

However, Professor Sirri discovered that Professor Harris made a drastic, and confounding, calculation error that overstated the value of the purported benefit by a factor of 100.[61] Simply put, to arrive at the $6.2 million figure, Professor Harris failed to convert the lending and borrowing rate data, percentages, into a decimal form (i.e. if the lending or borrowing rate for a security was 5%, Professor Harris' calculations use the whole number 5.0, rather than .05 when calculating the alleged illicit gains).[62] Not dividing the lending or borrowing rate data by 100 caused Professor Harris' estimated values of allegedly illicit gains to be inflated by the same factor.

When the error is corrected, the putative benefit or gain to Penson from the purported violations is $62,000 over the entire three year period. This amounts to $77.00 per day. Given

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[58] *See, e.g.*, OIP, ¶¶5, 7.

[59] Harris Report, ¶25.

[60] *Id.*, ¶26.

[61] *See* Sirri Report, ¶¶73-78 (detailing the error).

[62] *See id.*

that Penson's Stock Loan department generated approximately $77 million in revenue over this same time period, the putative "benefit" to Penson by intentionally violating the Rule was 0.08% of its total revenue and significantly less than Penson's *per day* Stock Lending revenue of approximately $100,000. [63]

It strains credulity to believe that anyone at Penson would implement a policy or practice to intentionally violate Rule 204T(a)/204(a) to obtain such a *de minimus* benefit *for Penson.* The allegations make less sense yet as to Delaney, who would receive no financial benefit from any such scheme,[64] and yet who is alleged to have devoted most of his working energy to further the alleged scheme. This is particularly true given the complexity and breadth of the scheme alleged by the Division, which purports to involve numerous participants and a significant number of independent acts that would be necessary to conceive of, perpetuate and conceal the scheme for three years. The actual data simply does not support the allegations.[65]

2. There Will Be No Credible Evidence that Delaney Was Aware of Any Wrongdoing.

To the extent the primary violation fails, the Division's claims against Delaney fail because Delaney could neither aid and abet, nor cause, a violation that did not happen. However, even assuming *arguendo* that the Division were able to present reliable evidence to support the existence of the alleged primary violation, the claims against Delaney independently fail because there will be no credible evidence that Delaney knew of any purported wrongdoing.

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[63] *See* Sirri Report, ¶78

[64] The evidence will establish that Delaney was not compensated, through salary or bonus, based upon Stock Loan's revenues.

[65] Professor Harris also fails to reduce the purported benefit amount to account for conduct occurring after Delaney left Penson, in April of 2011.

"Awareness of wrongdoing means knowledge of wrongdoing."[66] The "'awareness of wrong-doing requirement' in aiding and abetting disciplinary cases was 'designed to insure that innocent, incidental participants in transactions later found to be illegal are not subjected to harsh . . . administrative penalties.'"[67] In addition, the Division cannot conflate the second and third elements of aiding and abetting by attempting to rely on a recklessness (that Delaney "should have known" absent recklessness) to establish the awareness element. Rather, "[k]nowledge of the wrongdoing must be proven."[68] The D.C. Circuit made this clear in observing,"[w]e are willing to assume that the SEC thought - *incorrectly* - that reckless conduct amounted to a form of awareness of wrongdoing."[69]

Here, the Division alleges that Delaney "knew at all relevant times that Stock Loan was not complying with the T+6 market-open close-out requirement for CNS fails resulting from long sales, including long sales of loaned securities."[70] In support of this assertion, the Division alleges that Delaney was involved in several discussions with members of Penson's Stock Loan and Buy-Ins departments regarding Stock Loan's non-compliant practice and procedures for close-outs of CNS failures to deliver resulting from long sales of loaned securities.[71]

Delaney disputes these allegations and contends that the Division will not offer any credible evidence at trial to support these assertions. First, the actual data analyzed by the

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[66] *Howard,* 376 F.3d at 1142.

[67] *Id.* (citation omitted).

[68] *Id.* at 1143.

[69] *Id.* (emphasis added).

[70] OIP, ¶28.

[71] *See* OIP, ¶¶28-34.

Division's own expert establishes that there was no practice or policy to violate Rule 204T(a)/204(a) by any department in Penson.

Second, there is no documentary evidence (such as emails) to support the Division's assertion that Delaney was involved in any of the alleged meetings to discuss and confirm Stock Loan's purportedly non-compliant procedures and practices with respect to Rule 204T(a)/204(a). Rather, as detailed in the background above, the evidence will establish that the first time Delaney learned of any potential issues with respect to long sales of loaned securities was February of 2011.

However, even in February 2011, the issue was raised to Delaney in the context of a legal-compliance question. Namely, members of Penson's Stock Loan department believed that Rule 204 permitted Penson to "opt-in" to the penalty box (under Rule 204(b)), and that a violation would occur only if the Penson both failed to close out and did not honor the penalty box provision. Delaney disagreed with this interpretation of Rule 204, but agreed to, and did, immediately escalate the issue to both in-house and outside counsel. After consultation with counsel, Delaney directed both members of Stock Loan and Buy-Ins to some SEC guidance on the requirements of Rule 204:

> Rule 204 makes permanent the amendments contained in temporary Rule 204T, with limited modifications. Like temporary Rule 204T, Rule 204 enhances the delivery requirements of Regulation SHO by requiring that participants of a registered clearing agency deliver securities by settlement date, or if the participants have not delivered securities by settlement date, immediately purchase or borrow securities to close out the fail to deliver position by no later than the beginning of regular trading hours on the settlement date following the day the participant incurred the fail to deliver position, unless an exception applies. **<u>Failure to comply with this close-out requirement is a violation of Rule 204. In addition, a participant that does not comply with this close-out requirement, and any broker-dealer from which it receives trades for clearance and settlement, will not</u>**

be able to short sell the security for itself or for the account of another, unless it has first arranged to borrow or borrowed the security, until the fail to deliver position is closed out.[72]

Delaney thereafter further responded to questions from Stock Loan on the requirements of Rule 204.[73] Delaney then organized an "all hands call" with members of Penson's Compliance, Stock Loan and Buy-Ins departments with outside counsel to further address any on-going compliance questions that may have remained unresolved. These and other actions as will be established at trial, are entirely consistent with both Delaney's duties as CCO, and with the fact that he had no prior knowledge of any purported intentional practice and policy by Penson's Stock Loan department to violate Rule 204T(a)/204(a).[74]

Finally, because the evidence will establish that Delaney did not know of any non-compliant practices or procedures, there will be no factual basis or evidence to support the Division's other allegations that Delaney willfully supported Stock Loan in implementing intentionally non-compliant procedures, including that Delaney: intentionally drafted Penson's WSPs to omit reference to the "non-compliant" procedures; created a "Supervisory System" that would allow the Mike Johnson to remain unsupervised to continue the practice of intentionally violating Rule 204T(a)/204(a); or concealed the "non-compliant" procedures from regulators and

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[72] Guidance available at, *http://www.sec.gov/divisions/marketreg/tmcompliance/34-60388-secg.htm.* (emphasis added). That Penson's Stock Loan department mis-interpreted the requirements of Rule 204 is not necessarily surprising, as it is not apparent from the language of Rule 204 that the penalty box provisions of Rule 204(b) is in addition to the close-out requirements of Rule 204(a).

[73] Notably, as detailed above, the evidence will establish that this is not the first time Delaney or others in Penson's Compliance department detailed the requirements of Rule 204T(a)/204(a) to the business units at Penson.

[74] There is a significant number of email communications surrounding this issue. Penson's successor following the bankruptcy, Penson Technologies, LLC ("PTL"), contrary to prior statements from it counsel, has recently determined that it would not waive any privilege that may exist as to these documents. The Division has represented to counsel for Delaney that it would object to the introduction of such documents on the basis of privilege, even though the Division lacks standing to assert and enforce Penson's privilege. In actuality, the Division hopes to keep the documents from this Court because they are not favorable to the Division's allegations against Delaney. Delaney intends to address this issue in greater detail through pre-trial motion.

Penson's president/CEO, Yancey.[75] Where the evidence will establish that Delaney did not know of the alleged wrongdoing, if any existed, there is no factual basis to conclude that Delaney concealed anything or manipulated WSPs.

3. Delaney Did Not Knowingly and Substantially Assist the Conduct Constituting the Purported Violation.

To satisfy the "substantial assistance" element of aiding and abetting, "the SEC must show that the defendant 'in some sort associated himself with the venture, that he participated in it as something that he wished to bring about, and that he sought by his action to make it succeed.'"[76] "In other words, the primary violation must be a 'direct or reasonably foreseeable result' of the aider and abettor's conduct."[77]

Here, for similar reasons to those stated above, the Division will not be able to offer any credible evidence that Delaney "substantially assisted" the Stock Loan's purported intentional and systematic practice to violate Rule 204T(a)/204(a) with respect to long sales of loaned securities. Not only is any inference such a practice existed extremely dubious given the actual evidence showing a 99.3% close-out rate for long sales of loaned securities, but the financial motivation component upon which the Division contends motivated Delaney to render the substantial assistance is illusory. In short, the Division will offer no credible evidence to

[75] The evidence will establish that the Division's argument with respect to the purported concealment of the alleged violation from regulators fail for additional reasons, including because these responses are prepared there was no intentionally non-compliant practice and policy to report. Indeed, the evidence will show that these responses are prepared by business unit heads with information uniquely available to the business units, not Delaney, and are also reviewed by counsel (as is the practice in most regulated entities). Furthermore, where Penson was timely closing out the vast majority of fail to deliver positions, particularly with respect to potential long sales of loaned securities, there is nothing misleading or false about certifications that Penson has "reasonable processes" in place to close-out positions.

[76] *SEC v. Apuzzo,* 689 F.3d 204, 213 (2d Cir.2012).

[77] *SEC v. Grendys*, 840 F. Supp. 2d 36, 46 (D.D.C. 2012).

establish why Delaney—a CCO with a spotless record—would jeopardize his career to make the purported scheme succeed.

Moreover, as also indicated above, Delaney, individually and through members of the Compliance department under his control, took steps to prevent compliance issues with respect to Rule 204T(a)/204(a), including by: disseminating the requirements of the new Rule to the various Penson's business heads; responding to compliance questions as they arose; ensuring that procedures were put into place to comply with the new Rule; coordinating "3012" testing of compliance with the Rule that continued for months and required remediation of any violations; and escalating compliance issues, including the results of the 3012 test; requiring remediation of any violations, and escalating the results of the testing to Yancey. Furthermore, upon learning of additional possible Rule 204(a) compliance issues in Stock Loan in February of 2011, Delaney immediately worked to tackle the issue through direct discussion with, and advice to, Penson's Stock Loan and Buy-In departments, and by engaging in-house and outside counsel for further guidance. Thus, far from rendering substantial assistance to cause any violation Delaney, the evidence will establish that Delaney actively worked to prevent and remediate any such violations.

To satisfy the "substantial assistance" element of aiding and abetting, "the SEC must show that the defendant 'in some sort associated himself with the venture, that he participated in it as something that he wished to bring about, and that he sought by his action to make it succeed.'"[78] "In other words, the primary violation must be a 'direct or reasonably foreseeable result' of the aider and abettor's conduct."[79]

[78] *SEC v. Apuzzo*, 689 F.3d 204, 213 (2d Cir.2012).

[79] *S.E.C. v. Grendys*, 840 F. Supp. 2d 36, 46 (D.D.C. 2012).

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Moreover, as also indicated above, Delaney, individually and through members of the Compliance department under his control, took steps to prevent compliance issues with respect to Rule 204T(a)/204(a), including by: disseminating the requirements of the new Rule to the various Penson's business heads; responding to compliance questions as they arose; ensuring that procedures were put into place to comply with the new Rule; coordinating "3012" testing of compliance with the Rule that continued for months and required remediation of any violations; and escalating compliance issues, including the results of the 3012 test; requiring remediation of any violations, and escalating the results of the testing to Yancey. Furthermore, upon learning of additional possible Rule 204(a) compliance issues in Stock Loan in February of 2011, Delaney immediately worked to tackle the issue through direct discussion with, and advice to, Penson's Stock Loan and Buy-In departments, and by engaging in-house and outside counsel for further guidance. Thus, far from rendering substantial assistance to make the purported scheme "succeed," the evidence will establish that Delaney actively worked to prevent and remediate any such violations.

It is also anticipated that the Division may alternatively attempt to establish that Delany substantially assisted the purported scheme through recklessness. Notably, this would be directly contrary to the Division's allegations of "intentional" misconduct; recklessness, like negligence, is not mentioned in the OIP. Moreover, Delaney believes that the Division will also not offer credible evidence to establish that Delaney acted recklessly.

"'[E]xtreme recklessness" may support aiding and abetting liability."[80] "'Extreme recklessness' - or as many courts of appeals put it, 'severe recklessness' - may be found if the alleged aider and abettor encountered 'red flags,' or 'suspicious events creating reasons for doubt' that should have alerted him to the improper conduct of the primary violator, or if there was 'a danger ... so obvious that the actor must have been aware of' the danger."[81] "It is not enough that the accused aider and abettor's action or omission is 'derived from inexcusable neglect.'"[82] "'Extreme recklessness' is neither ordinary negligence nor 'merely a heightened form of ordinary negligence.'"[83] "To put the matter in terms of § 21C, aiding and abetting liability cannot rest on the proposition that the person 'should have known' he was assisting violations of the securities laws."[84]

The Division will not offer any credible evidence to meet this standard. Where the evidence will establish that the close-out rate for long sales of loaned securities exceeded 99%, what were the "red flags" to Delaney? Indeed, as indicated above, in May of 2010, a junior compliance officer, Eric Alaniz, forwarded Delaney and John Kenney (the COO of Penson) the

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80 *Howard,* 376 F.3d at 1143 (citations omitted).

81 *Id.* (internal citations and footnotes omitted).

82 *Id.* (citations omitted).

83 *Id.* (citation and footnote omitted).

84 *Id.*

results of the 3012 testing of Rule 204(a) compliance. These results, which included responses and measures prepared by both Stock Loan and Buy-Ins after being informed of the requirements of Rule 204T(a)/204(a), stated that measures were in place to ensure compliance with the Rule.[85] Furthermore, as indicated, the evidence will show that when Delaney learned that there were potential additional compliance issues with Stock Loan closing-out long sales of loaned securities in February of 2011, he immediately worked to provide them the correct advice to resolve any issues.

4. There Will Be No Credible Evidence that Delaney "Willfully" Aided and Abetted any Improper Conduct.

In order to establish its right to remedies in this matter, the Division must also establish that Delaney "willfully" aided and abetted the alleged wrongful conduct by Penson. As indicated, willfulness is shown where a person intends to commit an act that constitutes a violation.[86] For the reasons set forth above, there will be no credible evidence offered at trial to establish that Delaney intentionally committed any acts in support of the alleged scheme to violate Rule 204(a)T/204(a).

Accordingly, for the foregoing reasons, the Division's claims that Delaney aided and abetted Penson's alleged intentional practice to violate Rule 204T(a)/204(a) with respect to long sale of loaned securities should be denied for lack of credible supporting evidence.

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[85] To the extent the Division intends to rely on the earlier 3012 results, from December of 2009, showing high failure rates with respect to meeting the market-open buy-in requirements, this is a red herring. Even if this were to show that there were some potential compliance issues as of December of 2009, the evidence will establish that Delaney did not simply ignore the issue. Rather, compliance continued testing to ensure any issues raised in December 2009 were remediated. To the extent issues with closing out long sales of loaned securities persisted—and again the evidence of actual close-out rates is to the contrary—the evidence will show that this is because neither the Stock Loan nor Buy-In departments notified Compliance of these issues.

[86] *Wonsover v. SEC,* 205 F.3d 408, 414 (D.C. Cir. 2000); *Arthur Lipper Corp. v. SEC*, 547 F.2d 171, 180 (2d Cir. 1976).

B. Causing.

As indicated, the Division has also nominally asserted a "causing" violation against Delaney. However, the Division has not provided any allegations to support a causing claim that is distinct from its aiding and abetting claim, and the primary violation alleged by the Division is couched as intentional misconduct, which makes a negligence theory unavailable, as set forth above. Indeed, without proof of intentional misconduct by Delaney, all of the Division's allegations as to Delaney's role in the purported scheme to violate Rule 204T(a)/204(a) fail.

Nevertheless, even if this Court were to permit the Division to proceed on a pure negligence theory at hearing—to which Delaney would strongly object as contrary to his due process rights to notice since the OIP did not identify a negligence theory—there will be no credible evidence adduced at trial to support such a theory. Rather, the same evidence detailed above in the background section and with respect to recklessness also would preclude a finding that Delaney acted negligently or otherwise caused or contributed to any violations of Rule 204T(a)/204(a).

Specifically, the evidence will establish that Delaney acted reasonably in fulfilling his duties as CCO of Penson, including with respect to his response, and the response of those under his direction, to the enactment of Rule 204T(a)/204(a), and the alleged Rule 204T(a)/204(a) violations at issue. As discussed above, the standard is not perfect compliance; it is reasonable compliance. Penson's own close-out rate for long sales of loaned securities alone establishes that Penson, while Delaney was CCO, had reasonable processes in place to comply with the complicated provisions of Rule 204T(a)/204(a).

In addition, to the extent the Division were able to prove that, as the Division alleges, members of Stock Loan intentionally violated Rule 204T(a)/204(a), this should preclude a finding that Delaney caused any violation. Under established principles of negligence, "intentional misconduct" by a third party is a superseding cause that breaks a causal chain and relieves a party from possible negligence.[87] This makes logical sense; if members of Penson's Stock Loan department decided to intentionally violate Rule 204T(a)/204(a), then not only must they have been informed of the Rule's requirements, but, in addition, no further advice that Delaney could provide, or procedures he could have put into place, would have changed the outcome.

Accordingly, the Division's causing claim against Delaney should also be rejected.

V. CONCLUSION

For the foregoing reasons, Delaney respectfully requests that the Court rule that (1) Delaney has no liability on the Division's claims for aiding and abetting and causing; and (2) dismiss this administrative proceeding.[88]

DATED this 3rd day of November, 2014.

CLYDE SNOW & SESSIONS

Brent R. Baker

BRENT R. BAKER
ATTORNEYS FOR RESPONDENT THOMAS R. DELANEY II

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[87] *See, e.g., Rupert v. Daggett,* 695 F.3d 417, 426 (6th Cir. 2012) (observing that "intentional misconduct by the victim or third party will generally be considered a superseding cause"); *U.S. v. Speakman,* 594 F.3d 1165 (10th Cir. 2010) (observing "a third party's intentional tort will generally be held as a superseding cause of harm, thereby relieving another party of liability for negligence," and sufficient to "break the causal chain"); *see also* Restatement (Second) of Torts § 448 ("The act of a third person in committing an intentional tort or crime is a superseding cause of harm to another resulting therefrom....").

[88] Delaney has not separately addressed the remedies sought by the Division in this prehearing brief. Delaney maintains that no remedies should be awarded because the Division's claims will fail for the reasons stated herein. However, Delaney reserves the right to address the appropriateness of remedies, if any, in a separate proceeding/ filing after the liability phase is complete.

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November 3, 2014

Via Federal Express

Lynn M. Powalski, Deputy Secretary
Office of the Secretary
U.S. Securities and Exchange Commission
100 F. Street, N.E.
Mail Stop 1090
Washington, D.C. 20549

RE: *In the Matter of Thomas R. Delaney II and Charles W. Yancey,* Administrative Proceeding File No.: 3-15873

Dear Ms. Powalski:

Enclosed please find the original and three copies of Respondent Thomas R. Delaney II's First Amended Prehearing Brief.

By copy of this letter, I have served all parties of record. If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

CLYDE SNOW & SESSIONS

Aaron D. Lebenta

Encls.

cc: Honorable Jason S. Patil, Administrative Law Judge, U.S. Securities and Exchange Commission (courtesy copy via email)
Polly Atkinson, Division of Enforcement, U.S. Securities and Exchange Commission (via email)
Sarah S. Mallett, Haynes and Boone, Counsel to Yancey (via email)

EXHIBIT A

UNITED STATES OF AMERICA
Before the
SECURITIES AND EXCHANGE COMMISSION

In the Matter of	)	
	)	ADMINISTRATIVE PROCEEDING
Thomas R. Delaney II and	)	File No. 3-15873
Charles W. Yancey,	)	
	)	
Respondents.	)	

Expert Report of Professor Erik Sirri

October 14, 2014

Table of Contents

I. Qualifications and Assignment

1. I have been a Professor of Finance at Babson College in Wellesley, Massachusetts, since 2009, where I also previously held the same position from 1999 to 2006. I was an Assistant Professor of Finance at Harvard Business School from 1989 to 1995. I received my B.S. from the California Institute of Technology, an M.B.A. from the University of California, Irvine, and a Ph.D. in Finance from the University of California, Los Angeles.

2. I was the Director of the Division of Trading and Markets at the U.S. Securities and Exchange Commission ("SEC") from 2006 to 2009. As the Director of the Division of Trading and Markets, I was responsible to the SEC for matters relating to the regulation of stock and option exchanges, national securities associations, brokers, dealers, clearing agencies, and transfer agents.

3. I served as the SEC's Chief Economist from 1996 to 1999, where I managed the SEC's Office of Economic Analysis. As the Chief Economist, I was responsible for overseeing a staff of researchers that provided analysis to assist the SEC in an ongoing evaluation of policies, markets, and systems.

4. I have served as a Governor of the Boston Stock Exchange, a member of the regulatory board of the Boston Options Exchange, and a board member of the Managed Funds Association. I have also served as an independent fee consultant, appointed by the New York Attorney General, for Bank of America Columbia Funds and Nations Funds pursuant to a regulatory settlement. I am currently an independent trustee of the Natixis family of mutual funds and am on the Executive Committee and the Governing Council of the Independent Directors Council. Over the course of my career I have consulted for securities firms, stock exchanges, mutual fund companies, issuers, and information vendors on a variety of regulatory and business matters.

5. My areas of research include securities market structure, the interaction of securities law and finance, and investment management. My written work includes publications in peer-reviewed academic journals, financial articles, cases, and book chapters. My curriculum vitae, including a list of publications I have authored, is attached as Appendix A. A list of my prior testimony in the previous four years is provided in Appendix B. The documents considered for this report are listed in Appendix C.

6. I am being compensated at my standard billing rate of $950 per hour. In addition, I have been assisted in this matter by staff of Cornerstone Research, who worked under my

direction. I am a Senior Advisor at Cornerstone Research and receive compensation from Cornerstone Research based on its billings on matters where its staff supports me. My compensation in this matter, including my compensation from Cornerstone Research, is in no way contingent or based on the content of my opinion or the outcome of this or any other matter. I reserve the right to revise my opinions in light of new information and additional materials made available to me, including data, documents, or other testimony that are relevant to my opinions, or if I am asked to perform further research or analysis.

7. I have been retained as an expert by counsel for Thomas R. Delaney II in the above-caption matter to describe the background and mechanics of how securities trade, the clearance and settlement of trades, and Rule 204 of Regulation SHO. I have also been asked to evaluate and respond to certain analyses and opinions presented by Professor Lawrence Harris, expert witness for the Division of Enforcement of the U.S. Securities and Exchange Commission ("Division"), in his report dated September 29, 2014 ("Harris Report"), with respect to the Division's allegations that Penson Financial Services, Inc. ("Penson") violated Rules 204T and 204 of Regulation SHO with regards to failures to deliver associated with long sales of securities when shares of those particular securities were lent out.

II. Summary of Opinions

8. In Sections III through VI, I provide background descriptions of the mechanics of how securities trade, the clearing and settlement of trades, and Rule 204 of Regulation SHO. The following is a summary of the conclusions that I have reached based on my expertise, my review of relevant materials, and the analysis I have conducted:

a. As a result of securities being "fungible," and settlement occurring on a net position basis rather than a transaction basis, there is no method that would allow the unique mapping of specific sales transactions to fail to deliver positions in the CNS system, and consequently, to violations of Rule 204(a).

b. The Harris Report attempts to identify Rule 204(a) violations for "long" sale security transactions cleared by Penson when shares of those securities were loaned out. Professor Harris inflates his calculation of the benefits to Penson of his alleged Rule 204(a) violations by a factor of 100 due to a calculation error. This reduces his average benefit calculation from approximately $6.2 million to approximately $62 thousand.

c. Professor Harris' benefit calculation is further inflated by his incorrect method of aging Penson's CNS positions on trading days that are not settlement days.
d. Professor Harris does not have sufficiently detailed data to allow him to determine when Penson closed out its positions during the day. Although the timing of when Penson's delivery failures were closed out is an important consideration in Professor Harris' methodology, he has provided no basis for his "understanding" of when Penson closed out its fail to deliver positions.
e. The number of Rule 204(a) violations identified in the Harris Report is small when compared to the number of transactions cleared by Penson between October 1, 2008 and October 31, 2011. For example, only approximately 1 out of 800 long sale trades potentially associated with loaned shares contributed to a Rule 204(a) violation as identified by Professor Harris' Method II.
f. The vast majority of Professor Harris' alleged Rule 204(a) violations had a *de minimis* alleged economic benefit. Professor Harris' calculated "benefit" is less than $1.00 for almost half of the alleged Rule 204(a) violations that he identifies and is less than $10.00 for almost three-fourths of the alleged violations. Further, the majority of Professor Harris' estimated "benefit" to Penson is attributable to only a small number of his calculated Rule 204(a) violations.

9. The remainder of this report is organized as follows. I begin by discussing the necessary background to understand the issues in this case. In Section III, I explain how securities trade and the role of brokers in trading. In Section IV, I describe the mechanics of stock ownership in the United States, while I explain the mechanics of how money and shares change hands once a trade is made ("clearing" and "settlement") in Section V. In Section VI, I discuss Rule 204 of Regulation SHO. In the final section, Section VII, I address calculation errors made by Professor Harris, as well as unsupported assumptions in his methodology.

III. How Securities Trade and the Role of Brokers in Trading

A. Long versus Short Sales

10. Secondary markets allow investors to trade a company's securities. For example, investors can purchase shares of the common stock of a company if they believe the stock

price will increase. Secondary markets also allow an investor who already owns the shares in a company to sell shares. Such a sale, in which the investor is selling shares he or she owns, is termed a "long sale."[1]

11. An investor who does not own any shares in the company has no shares to sell, but the secondary equity markets still allow that investor to sell shares. In such a case, the investor can choose to enact a "short sale." A short sale is "any sale of a security which the seller does not own...."[2] As an example, an investor can initiate a short sale by selling borrowed shares. The loan contract for the borrowed shares creates an obligation to return shares at some later date.[3]

12. An investor who has bought stock and maintains positive holdings of a security is said to have a "long position" in that security. The investor's position benefits from an increase in the price of the shares of that security. An investor who has sold a stock short and has not covered it is said to have a "short position" in that security.[4] Having a short position in a security means that the investor's position benefits from a decrease in the price of the shorted stock. The process of closing out a short position by purchasing shares is referred to as "covering" the short position.[5]

B. The Role of Brokers in Trading

13. Investors generally trade equity securities with the assistance of brokers. Brokers can serve as intermediaries between buyers and sellers and effect trades for the accounts of their customers (the buyer or seller).[6]

14. When a security is traded, a buyer and seller each use the services of a broker to execute the trade in the secondary market. In addition to executing a trade, brokers may also facilitate the borrowing of a security for customers who wish to sell the security short.

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[1] "Stock Purchases: Long and Short," U.S. Securities and Exchange Commission, http://investor.gov/print/215, accessed October 9, 2014.

[2] SEC Regulation SHO Rule 200. The definition of a short sale also includes sales which are "consummated by the delivery of a security borrowed by, or for the account of, the seller."

[3] A short sale can also be transacted without first borrowing shares. In this situation, what is required is for the short seller's broker to have "reasonable grounds to believe that the security can be borrowed so that it can be delivered on the date delivery is due," also known as the "locate" requirement for short selling. Regulation SHO Rule 203(b), Borrowing and Delivery Requirements, Short Sales.

[4] "Stock Purchases: Long and Short," U.S. Securities and Exchange Commission, http://investor.gov/print/215, accessed October 9, 2014.

[5] Zvi Bodie, Alex Kane, and Alan J. Marcus (2005), *Investments*, McGraw-Hill/Irwin, Sixth Edition, p. 91.

[6] See "Guide to Broker Dealer Registration," Division of Trading and Markets, U.S. Securities and Exchange Commission, April 2008, http://www.sec.gov/divisions/marketreg/bdguide.htm, accessed October 9, 2014.

Typically, it is a broker, and not the customer, who borrows the security on the customer's behalf. As compensation, the broker usually charges some type of fee for this service.

15. Brokers also offer a service that allows their customers to trade using borrowed money, or "margin."[7] Investors who purchase securities on margin borrow part of the purchase price from their broker and use the purchased securities as collateral for the margin loan.[8] Brokers charge investors a fee for this service.

16. Securities purchased on margin can allow brokers to generate additional revenue by loaning out the securities in their customers' margin accounts.[9] These securities can be loaned to other broker-dealers[10] or investors, including those who want to short sell the security. When the securities are loaned out, the borrower is required to post collateral as security against the loan. In most instances the collateral posted is cash, in which case the borrower will generally earn (or pay) an interest rate based on the funds placed with the broker as collateral. This rate is known as the "rebate rate" associated with the loaned security. In general, for securities that are easier to borrow, the rebate rate is positive, which means the borrower earns interest on his or her collateral funds; for securities that are harder to borrow, the rebate rate is often negative due to the scarcity value of the shares, which means the borrower pays the lender interest based on the collateral funds.[11]

IV. Mechanics of Security Ownership

17. Investors buy and sell securities through their brokers. However, investors are not generally the registered owner of the securities that they purchase. Most securities of publicly traded companies are held in "street name" through the investor's broker. Thus an

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[7] Zvi Bodie, Alex Kane, and Alan J. Marcus (2005), *Investments*, McGraw-Hill/Irwin, Sixth Edition, p. 88. Also see "Margin: Borrowing Money To Pay For Stocks," U.S. Securities and Exchange Commission, http://www.sec.gov/investor/pubs/margin.htm, accessed October 13, 2014 and "Purchasing on Margin, Risks Involved With Trading in a Margin Account," FINRA, http://www.finra.org/Investors/SmartInvesting/AdvancedInvesting/MarginInformation/p005927, accessed October 13, 2014.

[8] Margin can provide leverage that increases the potential gains or losses to the investor. Zvi Bodie, Alex Kane, and Alan J. Marcus (2005), *Investments*, McGraw-Hill/Irwin, Sixth Edition, pp. 88-91.

[9] "Stock Purchases: Long and Short," U.S. Securities and Exchange Commission, http://investor.gov/print/215, accessed October 9, 2014.

[10] A broker acts in the capacity of an agent and effects trades for the account of its customers; a dealer acts in the capacity of a principal and effects trades for his or her own account, through a broker or otherwise. A broker-dealer acts in the capacity of a broker (agent) or a dealer (principal) when effecting trades. "Guide to Broker Dealer Registration," Division of Trading and Markets, U.S. Securities and Exchange Commission, April 2008, http://www.sec.gov/divisions/marketreg/bdguide.htm, accessed October 9, 2014.

[11] Charles M. Jones and Owen A. Lamont (2002), Short-sale constraints and stock returns, Journal of Financial Economics, 66, p. 212.

investor who has purchased shares of a security owns the security only indirectly.[12] For shares held in street name, the Depository Trust Company ("DTC"), through its nominee name "Cede and Co.," is the registered owner of the security. The DTC is the central securities depository in the United States.[13]

18. DTC "participants," such as broker-dealers and custodian banks,[14] have accounts at the DTC. They are not the registered owners of shares, but rather they hold a "securities entitlement" against the DTC, giving them a legal claim to the rights, benefits, and risks associated with owning the security.[15] Likewise, investors who hold securities in an account with a broker-dealer or custodian bank are not the registered owners. Rather, they hold a securities entitlement against the broker-dealer or custodian bank, and are said to be "beneficial owners" of the security.[16] Security ownership is recorded in electronic book entry form, both at the DTC and at the broker-dealer or custodian bank.[17]

19. A consequence of this security ownership structure is that the shares of securities held by a broker-dealer for its customers are fungible or interchangeable.[18] That is, there is no one-to-one ownership mapping between the shares purchased by a particular investor and the shares held by the investor's broker or custodian bank at the DTC. When an investor sells shares held in street name, it is not specific registered shares that are sold, and those shares cannot be uniquely mapped to the shares that the investor had previously purchased.

20. Additionally, securities are immobilized at the DTC, and a trade will typically cause no change in DTC's registered ownership. As long as the shares remain at the DTC, the DTC remains the registered owner through its nominee name.[19] Only the beneficial ownership of the shares changes when a trade occurs. When a security is bought or sold, the trade generates a settlement obligation for one party to deliver securities on behalf of the seller, and

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[12] Virginia B. Morris and Stuart Z. Goldstein (2010), Life Cycle of a Security, pp. 10-11.

[13] "DTC, as a central securities depository, holds custody of 85% to 90% of all securities in the United States and services those assets for financial firms on behalf of investors." Virginia B. Morris and Stuart Z. Goldstein, Guide to Clearance & Settlement: An Introduction to DTCC, p. 23.

[14] "A custodian bank is a bank that holds assets... for institutional investors, corporations and wealthy individuals. The custodian bank also collects investment income generated by client assets, provides corporate communications to its clients, and participates in the settlement of securities transactions on their behalf." "101 Key Terms You Need to Know About DTCC and Financial Market Infrastructures," Depository Trust & Clearing Corporation, p. 4.

[15] Operational Arrangements, The Depository Trust Company, January 2012, p. 12.

[16] Virginia B. Morris and Stuart Z. Goldstein, Guide to Clearance & Settlement: An Introduction to DTCC, p. 32.

[17] Virginia B. Morris and Stuart Z. Goldstein, Guide to Clearance & Settlement: An Introduction to DTCC, p. 5.

[18] "A securities Intermediary shall promptly obtain and thereafter maintain a financial asset in a quantity corresponding to the aggregate of all security entitlements it has established in favor of its entitlement holders with respect to that financial asset. The securities Intermediary may maintain those financial assets directly or through one or more other securities intermediaries." Uniform Commercial Code, Article 8-504. Also see Virginia B. Morris and Stuart Z. Goldstein (2010), Life Cycle of a Security, p. 9.

[19] Virginia B. Morris and Stuart Z. Goldstein (2010), Life Cycle of a Security, p. 10.

for another party to deliver cash on behalf of the buyer.[20] As I explain below, this "delivery" of securities refers to a book entry movement of securities entitlements from one DTC participant's account to another.

V. Mechanics of Clearing and Settlement

A. Clearing and Settlement

21. Clearing and settlement is "a process, which, at the end of the day, ensures that sellers are paid for the securities they sold, and buyers receive the securities they bought."[21] "Clearing" involves confirming the details (e.g. the price, amount, and counterparties) of a trade.[22] In the process of "settlement," the seller delivers shares and receives payment, while the buyer sends payment and receives shares.[23]

22. In the U.S., a trade is cleared and settled at a registered clearing agency where the buyer and seller are represented by a "clearing broker" or "clearing firm." The clearing broker must be a member of the registered clearing agency and may or may not be the same broker who executed the trade. Brokers who are not members of the registered clearing agency need the services of a clearing broker in order to clear and settle their own trades or the trades of their customers.[24] A clearing broker provides clearing and settlement services for its correspondent clients ("correspondent clients"), who are generally broker-dealers, and its clients' non-broker-dealer customers ("customers"), who are the beneficial buyers and sellers of a security.

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[20] "Settling Securities Transactions, T+3," U.S. Securities and Exchange Commission, http://www.sec.gov/answers/tplus3.htm, accessed October 14, 2014.

[21] The Depository Trust & Clearing Corporation, Following a Trade: A Guide to DTCC's Pivotal Roles in How Securities Change Hands, p. 2.

[22] "In the clearance process, the clearing agency compares trades submitted by its broker-dealer 'members' or 'participants.' The clearing agency matches the submitted trades, and verifies that they will 'clear,' that is, the trades submitted by each side are consistent." Paul B. Uhlenhop and Michael Wise (2014), Broker-Dealer Regulation, Chapter 25: Clearing Arrangements for Introducing Broker-Dealers, Practising Law Institute, 2nd Edition, p. 5; "101 Key Terms You Need to Know About DTCC and Financial Market Infrastructures," The Depository Trust & Clearing Corporation, p. 3.

[23] "101 Key Terms You Need to Know About DTCC and Financial Market Infrastructures," The Depository Trust & Clearing Corporation, p. 11.

[24] "Most broker-dealers are not members of a clearing corporation or a depository. Only clearing firms, who can meet the membership requirements of substantial assets, liquidity, and capital, are permitted to be clearing agency participants. These clearing firms also must maintain a large back office of expert employees and state of the art information facilities, since most communications between a participant and a clearing agency are by electronic communication. In addition, substantial banking relationships are required for regular movement of money. Because of these infrastructure and capital requirements, the number of clearing agency participants is limited. Broker-dealers who are not clearing agency participants require access through a clearing firm." Paul B. Uhlenhop and Michael Wise (2014), Broker-Dealer Regulation, Chapter 25: Clearing Arrangements for Introducing Broker-Dealers, Practising Law Institute, 2nd Edition, p. 7.

23. The National Securities Clearing Corporation ("NSCC") is the registered clearing agency that clears and settles nearly all broker-to-broker trades of equity securities in the United States.[25] Broker-to-broker trades are trades in which a broker serves as the agent to each party to the trade and the buyer and seller generally each have their own broker. The NSCC interposes itself as central counterparty to each trade and guarantees the settlement of a trade in the event of a default of one of the original buyers or sellers.[26] Clearing brokers can also assume the risk associated with a failure to perform on the trade on the part of its correspondent clients or their correspondent clients' customers.

24. The DTC, as mentioned above, is the central securities depository in the U.S. clearing system. The NSCC's clearing firm members are DTC participants that hold securities in depository accounts at the DTC. Because securities are held in street name and ownership records are held in electronic form, delivery in the settlement of a trade takes the form of a book entry movement of securities entitlements from one DTC participant's account to another.[27] Delivery is precipitated when the DTC receives delivery instructions from the NSCC, which is authorized to give such instructions for the delivering account.[28] As the NSCC is the central counterparty, shares are delivered from a DTC participant's account to the NSCC's account or from the NSCC's account to a DTC participant's account.[29]

B. Penson

25. Penson was a clearing broker member of the NSCC and a DTC participant.[30] As a clearing broker, Penson cleared and settled trades for its correspondent clients.[31] Its principal clients consisted of "online, direct access and traditional retail brokers."[32] Penson generally cleared trades in the U.S. on a fully-disclosed basis, which means that the identity of its correspondent clients' customers (the buyers and sellers of securities) was known to Penson. Penson also maintained the customer accounts of its correspondent clients.[33]

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[25] The NSCC also processes broker-to-broker trades of municipal and corporate bond securities. The Depository Trust & Clearing Corporation, An Introduction to DTCC: Services and Capabilities, p. 3.
[26] CNS Settlement as Delivery Versus Payment in DTC (CNS for Value), NSCC and DTC White Paper, September 2011, p. 4.
[27] The Depository Trust & Clearing Corporation, Following a Trade: A Guide to DTCC's Pivotal Roles in How Securities Change Hands, p. 4.
[28] The Depository Trust & Clearing Corporation, Following a Trade: A Guide to DTCC's Pivotal Roles in How Securities Change Hands, p. 4.
[29] The NSCC and the DTC are subsidiaries of the Depository Trust Clearing Corporation ("DTCC").
[30] Penson Form 10-K, FY 2009, p. 11.
[31] Penson Form 10-K, FY 2009, pp. 1–5.
[32] Penson Form 10-K, FY 2009, p. 6.
[33] Penson Form 10-K, FY 2009, p. 11.

26. Further, as part of its correspondent relationships, Penson provided margin lending and securities lending services to its correspondents clients and their customers.[34,35] As explained above, the service of margin lending allows investors to trade using borrowed funds. Securities lending is the service of loaning out securities, often for the borrower's use in effecting a short sale in that security.[36]

C. Continuous Net Settlement ("CNS") System

27. As stated above, NSCC is the registered clearing agency for nearly all broker-to-broker trades of equity securities. The actual settlement of trades takes place in the NSCC's CNS system.[37] CNS is an accounting and settling system for broker-dealers and banks that are members of the NSCC ("Clearing Members"), including Penson.[38]

28. When trades are processed through CNS, all the trades on a given security that are cleared through a particular Clearing Member and are due to settle on a given date are batched together. That is, all buys and sells for the day are netted out against each other, resulting in a single settlement obligation per security for each Clearing Member.[39] On any one day, the Clearing Member will either have a single obligation to deliver shares to, or a right to receive shares from the NSCC. In offsetting buys against sells, netting reduces the number of trade obligations that require settlement. To illustrate, suppose that a Clearing Member has a correspondent client with 10 customers who on Monday (day T) purchased a total of 90,000 shares of a particular type of security (e.g. each customer purchase was for 9,000 shares of the same security) and another correspondent client with 50 customers who sold a total of 100,000 shares of the same security (e.g. each customer sale was for 2,000 shares of that security). In the CNS system, all of the transactions for these 60 investors would be netted together to generate a single Clearing Member net delivery obligation of

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[34] "Under these margin lending arrangements, we extend credit to our correspondents and their customers so that they may purchase securities on margin. As is typical in margin lending arrangements, we extend credit for a portion of the purchase price of the securities, which is collateralized by existing securities and cash in the accounts of our correspondents and their customers." Penson Form 10-K, FY 2009, pp. 1, 6-7.

[35] "We lend securities that we hold for our correspondents and their customers to other broker-dealers as a means of financing our business and facilitating transactions." Penson Form 10-K, FY 2009, p. 12.

[36] "Stock Purchases: Long and Short," U.S. Securities and Exchange Commission, http://investor.gov/introduction-markets/how-markets-work/stock-purchases-sales-long-short, accessed October 13, 2014.

[37] What follows is an abbreviated description of the CNS clearing and settlement process. Further details on the structure and rules governing the CNS system are contained in National Securities Clearing Corporation, Rules and Procedures, Effective October 30, 2009. Also see CNS Settlement as Delivery Versus Payment in DTC (CNS for Value), NSCC and DTC White Paper, September 2011.

[38] National Securities Clearing Corporation, Rules and Procedures, Rule 11, Effective October 30, 2009, p. 54.

[39] National Securities Clearing Corporation, Rules and Procedures, Rule 11, Effective October 30, 2009, p. 54.

10,000 shares on the settlement date (90,000 shares purchased - 100,000 shares sold = -10,000 shares). That is, the Clearing Member must deliver 10,000 shares of that type of security to the NSCC. Exhibit 1 illustrates the case that the Clearing Member fulfills this delivery obligation on Thursday (T+3). In the absence of other trades this means that the Clearing Member is "CNS flat" by Thursday evening, i.e. he does not have any open delivery obligations or rights to receive. CNS is a balanced system, so that on each settlement day, the number of shares to be delivered from all members to the NSCC is equal to the number of shares due to be received from the NSCC by all members.[40] Also, the delivery and receipt of shares is done on a net basis, and no Clearing Member directly owes shares to any other Clearing Member. Rather, the Clearing Members have a net delivery obligation to, or net right to receive from, the NSCC as the central counterparty.[41]

29. A consequence of the ownership structure of securities in street name and the process of netting in clearing and settlement is that a Clearing Member's delivery obligation to the NSCC is neither mapped to individuals nor to specific buy or sell trades. Rather, this delivery obligation is managed and handled as a fungible mass of shares on the Clearing Member's books, and on a net basis in the CNS system.[42] As I explain below, because shares of a security are fungible and indistinguishable, any shares that are available to the Clearing Member (from various sources) can be used to satisfy a delivery obligation to the NSCC.

D. Fail to Deliver

30. If an equity trade occurs on day T, settlement generally occurs on T+3, the third settlement day after the trade date ("T+3").[43-44] On the third settlement day following the trade, the NSCC conducts its regular evening cycle, in which the net number of shares of a security purchased on day T is added to any previously unsettled CNS balance in the Clearing

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[40] CNS Settlement as Delivery Versus Payment in DTC (CNS for Value), NSCC and DTC White Paper, September 2011, p. 5.

[41] CNS Settlement as Delivery Versus Payment in DTC (CNS for Value), NSCC and DTC White Paper, September 2011, p. 5.

[42] Virginia B. Morris and Stuart Z. Goldstein (2010), Life Cycle of a Security, p. 9.

[43] While most equity securities have 3-day settlement cycles, there are exceptions. "About Settling in Three Days: T+3," U.S. Securities and Exchange Commission, http://www.sec.gov/investor/pubs/tplus3.htm, accessed October 8, 2014. For the remainder of my report, the term "T+X" refers to X settlement days after the trade date T.

[44] Regulation SHO Rule 203(c) defines a settlement day as "...any business day on which deliveries of securities and payments of money may be made through the facilities of a registered clearing agency." In most cases, "business days" for trade settlements are the same as "trading days" for securities transactions. Two exceptions are Columbus Day in October and Veterans Day in November. Although trading occurs on these days, these are days when equity security settlements do not occur through the DTC. See "Year 2010 Anticipated Holiday Schedule," DTCC, December 18, 2009.

Member's account, to determine the number of shares of a security the member is due to receive or deliver.[45] Clearing Members receive reports indicating their respective CNS positions, and settlement instructions are sent to the DTC.[46] "Delivery" occurs when the DTC moves shares of a security out of the DTC account of a Clearing Member who has a net delivery obligation, and the DTC moves the securities in accordance with these instructions.

31. In addition to the evening cycle, the NSCC also conducts a day cycle that resembles the evening cycle "except that the process is continual, [with] entries being effected every few minutes."[47] As additional securities become available in a Clearing Member's DTC account, they are used to satisfy existing delivery obligations unless the Clearing Member specifically designates otherwise. Clearing Members periodically receive notifications regarding their settlement activity during the day.

32. A "fail to deliver" ("FTD") occurs if the Clearing Member does not have sufficient shares of a security in its DTC account to satisfy its net obligation due to the NSCC on that day ("CNS obligation").[48] If one or more Clearing Members have an FTD, the NSCC may not be able to make delivery to other Clearing Members who have a net receive in the same security, in which case these other Clearing Members might incur a "fail to receive" ("FTR") in the CNS system on that day.[49]

33. To illustrate (see Exhibit 2), as in the example above, assume that on Monday (day T) a Clearing Member's correspondent clients have 10 customers who purchased a total of 90,000 shares of a security and 50 customers who sold a total of 100,000 shares of the same security. In the CNS system, all of the transactions for these 60 investors from Monday (day T) would be netted together, to generate a Clearing Member net delivery obligation of 10,000

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[45] National Securities Clearing Corporation, Rules and Procedures, Effective October 30, 2009, pp. 204-205.

[46] "[T]he delivery of securities from a Member's Designated Depository account to satisfy short positions is an automatic process and requires no action on the part of the Member. Securities are removed from the Member's Designated Depository account to the extent that a sufficient quantity is on deposit." Furthermore, each Member can choose to deliver all or part of a previously unsettled CNS balance: "By indicating a particular quantity as an Exemption, the Member directs the [NSCC] not to settle certain short positions or portions thereof." National Securities Clearing Corporation, Rules and Procedures, Effective October 30, 2009, pp. 204-208.

[47] National Securities Clearing Corporation, Rules and Procedures, Procedure VII C., Effective October 30, 2009, p. 205.

[48] "A short position represents the quantity owed to the Corporation by the Member (the Member's fail-to-deliver). The Corporation is the contra side to all long and short positions." National Securities Clearing Corporation, Rules and Procedures, Procedure VII C.1, Effective October 30, 2009, p. 204.

[49] When there is a fail to deliver in the CNS system, NSCC may obtain shares from the "Stock Borrow Program" to make delivery to the participants that are due to receive shares. Therefore, a CNS fail to deliver does not necessarily imply a CNS fail to receive by another party. National Securities Clearing Corporation, Rules and Procedures, Addendum C, Effective October 30, 2009, pp. 286–288.

shares to be settled on Thursday (T+3).[50] If the Clearing Member is unable to deliver the shares, it incurs an FTD of 10,000 shares.

34. Assume, further, that on Monday (T) in the previous example, the Clearing Member has an FTR balance of 2,000 shares in the security, which is carried over from the previous settlement day, and this FTR persists until Thursday (see Exhibit 3). In the Thursday (T+3) end of day settlement cycle, the 10,000 share net delivery obligation from trading in the security on Monday nets against the previous FTR of 2,000 shares, making the net delivery obligation in the security equal to 8,000 shares (2,000 - 10,000 = -8,000).

35. The NSCC sends instructions to the DTC to move 8,000 shares of the security out of the Clearing Member's DTC account and into the NSCC's DTC account. If the Clearing Member does not have any shares in their DTC account, they have an FTD in the CNS system of 8,000 shares in the security.

36. In the example above, if on Monday the Clearing Member instead has an FTR balance of 10,000 shares in the security which persists from the previous settlement day until Thursday, the end-of-day settlement cycle on Thursday (T+3) will result in a "net zero" or "CNS flat" position in that security since the FTR of 10,000 shares exactly offsets the net delivery obligation of 10,000 shares (see Exhibit 4). In this case, the previous day's FTR balance completely obviates the Clearing Member's need to deliver shares on T+3. Thus, the Clearing Member neither has an obligation to deliver nor is entitled to receive shares of the security that day.

37. It is important to note that because trades are batched and netted for each Clearing Member before settlement, an individual customer might sell short and yet the Clearing Member may have no net delivery obligation on T+3 because other customers of its correspondent clients purchased shares on the same day. For example, for a particular Clearing Member, one of its correspondent clients may have a customer selling short 600 shares on day T, and another correspondent client may have a customer buying 1,000 shares of the same security on day T. That Clearing Member will then have a net receive position of 400 shares at NSCC on day T+3 (1,000 - 600 = 400), and there will be no share delivery requirement at the NSCC for that Clearing Member associated with the customer's 600 shares sold short. Thus, short selling does not necessarily result in a delivery requirement for

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[50] This example assumes that the Clearing Member's customers are not on opposite sides of the same trade. When that occurs, the trade is settled internally through accounting entries in broker's books and is not cleared through the NSCC.

the Clearing Member. The same can be said of long selling—the resulting CNS balance depends on the net activity of all of the Clearing Member's correspondent clients.

38. Moreover, because Clearing Members deliver shares to the NSCC to settle their net delivery obligation in a security and not to settle individual customer trades, FTDs always occur at the Clearing Member level and not at the correspondent client or customer or trade level. Thus, FTDs cannot generally be attributed to individual customers or their particular trades.[51]

39. To illustrate, in the hypothetical example described above, a Clearing Member cleared trades for 10 customers who purchased 90,000 shares and 50 customers who sold 100,000 shares, and had a previous FTR of 2,000 shares, so that its net delivery obligation on T+3 was 8,000 shares. If the Clearing Member is unable to deliver the 8,000 shares, this appears in the Clearing Member's CNS account as an FTD of 8,000 shares. If we further assume that each of the 50 customers sold short 2,000 shares of the security, and none of these customers had covered their short positions by T+3, then any attempt to assign the 8,000 share FTD to the trades of 4 specific customers (2,000 shares x 4 customers = 8,000 shares) of the Clearing Member's correspondent clients would be completely arbitrary. There is no accounting system at the NSCC that allocates the FTD to the 50 customers who sold the security short.

40. Similarly, whether a Clearing Member's CNS short position is due to short sales or long sales is not well defined, and requires the Clearing Member to use an algorithm to make such a determination. This allocation is not unique (meaning that another similarly situated Clearing Member could use its own algorithm and arrive at a different allocation), and takes place only on the books and records of the Clearing Member. For instance, consider another example where a Clearing Member cleared trades for one customer that purchased 15,000 shares of a particular type of security, one customer that sold short 10,000 shares of the same type, and one customer that sold long 10,000 shares of the same type. If these are the only trades to be cleared and settled on the settlement date for a particular stock for that Clearing Member, the Clearing Member's net delivery obligation on T+3 is 5,000 shares (15,000 - 10,000 - 10,000 = -5,000). Assume further that the customer selling short had not covered his or her short position in the security by T+3 and that the Clearing Member has 10,000 shares of the same type of security loaned out. If the Clearing Member is unable to deliver the

[51] There can be exceptions to this statement. For example, if only one customer trades on day T, and the Clearing Member is CNS flat as of close of business T+2, the Clearing Member's obligation on T+3 may arise solely due to the trades of that one customer.

5,000 shares, this appears as an FTD of 5,000 shares. There is no accounting system at the NSCC that uniquely allocates the 5,000 share FTD to the short sale or to the long sale. Any determination that the 5,000 share FTD was due to either the long or the short sale will be done only on the books and records of the Member.

41. While a Clearing Member's net delivery obligation to the NSCC in a security cannot generally be attributed to specific customer trades, the following is a partial list of circumstances that can contribute to an FTD position in the CNS system:

a. Shares are not available to the Clearing Member to be borrowed on T+3 in order to settle customer short sales transacted on day T. I explained in Section III that one way of transacting a short sale is by selling borrowed shares. However, a short sale can also be transacted without first borrowing shares as long as the short seller's broker reasonably believes that the security can be borrowed and delivered by the settlement date of the short sale.[52] If on settlement date, the security is not available to be borrowed and if the Clearing Member does not have shares available from other sources to settle the short sale, then the short sale could contribute to an FTD in the CNS system.[53]

b. Customers sold a security long on day T but the Clearing Member does not have shares available to settle the trade on T+3 because the shares are on loan. As I explained earlier, brokers who provide the service of margin trading can earn additional revenue by loaning out the securities that serve as collateral for their customers' margin loans. Margin customers may sell shares of their collateral securities, and such sales are considered long sales. If shares of the security have been loaned out, they can be recalled by the Clearing Member in order to settle the long sale. However, if the shares are not returned by the settlement date, and the Clearing Member does not have shares of the security available from other sources to settle the sale, the long sale could contribute to an FTD in the CNS system.

c. Customers sold a security long on day T, but shares of the security have not been delivered to the Clearing Member by the settlement date T+3. In this situation, under certain circumstances, a customer who clears trades through a

[52] This is the locate requirement for short selling. Regulation SHO Rule 203(b), Borrowing and Delivery Requirements, Short Sales.

[53] As illustrated above, an FTR could offset and even obviate a Clearing Member's need to deliver shares.

Clearing Member may hold securities "away" from the Clearing Member, e.g. shares owned by the customer are held in the DTC account of another broker-dealer or custodian bank, and not in the DTC account of the Clearing Member.[54] If the customer sells his or her shares but the customer's other broker-dealer or custodian bank is unable to deliver or transfer shares to the Clearing Member, and the Clearing Member does not have shares of the security available from other sources to settle the sale, the long sale could contribute to an FTD in the CNS system.

d. Customers sold a security long on day T, and the customer was holding the shares directly in the form of physical certificates. Because of human error or delay in handling the physical certificates, the shares are not delivered to the NSCC by T+3.[55]

e. Many other issues outside of the Clearing Member's control can also trigger FTDs. Such issues include counterparty instruction errors and the issuance of stock dividends. Additionally, the DTCC on occasion freezes deliveries on certain securities. Such freezes are referred to as "chills" and often result from corporate reorganization or insolvency. A frozen security's shares cannot be moved and therefore cannot be delivered to the NSCC.[56]

42. Note that any combination of these circumstances can contribute to a Clearing Member's FTD in the CNS system. I understand that at issue in this matter are FTDs associated with long sales of securities when shares of those particular securities were lent out.[57]

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[54] According to testimony from Penson's Buy-In Manager, Summer Poldrack, one scenario in which Penson would have an FTD in the CNS system on the morning of T+6 associated with a long sale is when a customer clears a long sale through Penson but has not delivered the shares to Penson by the morning of T+6, Testimony of Summer Faith Poldrack, August 10, 2011, pp. 43–44.

[55] "For example, human or mechanical errors or processing delays can result from transferring securities in custodial or other form rather than book-entry form, thereby causing a fail to deliver on a long sale within the normal three-day settlement period." SEC Release No. 34-58774, "Naked" Short Selling Antifraud Rule, Final Rule, October 17, 2008, Footnote 9.

[56] Amal Aly, Comment Letter, Amendments to Regulation SHO – Rule 204T, SIFMA, December 16, 2008, pp. 3–4.

[57] Order Instituting Proceedings, No. 3-15873, in the Matter of Thomas R. Delaney II and Charles W. Yancey, May 19, 2014.

VI. Regulation SHO and Rule 204

A. The SEC's Rationale for Adopting Rule 204

43. Regulation SHO became fully effective in January 2005[58] and provides a regulatory framework for governing short sales and the delivery obligations of members of registered clearing agencies.[59] The SEC adopted Regulation SHO in order to "address those situations where the level of fails to deliver for [a] particular stock is so substantial that it might impact the market for that security."[60] To this purpose, it introduced several rules and definitions. Among them, it established locate and delivery requirements for short sales and delivery requirements for long sales of equity securities, which are meant to "enhance the operation, integrity, and stability of the markets."[61]

44. Delivery obligations were enumerated in Regulation SHO Rule 203. This Rule was superseded with the introduction of Rule 204T, first in September 2008 through an emergency order, and in October 2008 by adoption as an interim final temporary rule.[62] Rule 204T was a temporary measure undertaken during the height of the 2008 credit crisis meant to address potentially abusive "naked" short selling (i.e. "selling short without having borrowed the securities to make delivery"[63]) by "strengthening" the close-out requirements of Regulation SHO for fails to deliver of any equity security.[64] Rule 204 succeeded rule 204T in July 2009 and, with some modifications, made permanent amendments contained in Rule 204T to "further [the Commission's] goal of reducing fails to deliver…"[65]

45. Rule 204T and Rule 204 are the operative close-out rules for the matters at issue in this case.

B. Rule 204 Close-Out Requirements

46. Rule 204 applies to "participant[s] of a registered clearing agency," and refers to the delivery of securities to a registered clearing agency in the settlement of sales.[66] In U.S.

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[58] However, Regulation SHO was amended several times after this date.
[59] SEC Release No. 34-56212, Amendments to Regulation SHO, Final Rule, October 15, 2007, pp. 2, 9.
[60] SEC Release No. 34-56212, Amendments to Regulation SHO, Final Rule, October 15, 2007, p. 3.
[61] Federal Register 69(151), August 6, 2004, pp. 48008, 48025–48026.
[62] SEC Release No. 34-58592, September 18, 2008; SEC Release No. 34-58773, Amendments to Regulation SHO, Interim final temporary rule, October 17, 2008.
[63] SEC Release No. 34-58773, Amendments to Regulation SHO, Interim final temporary rule, October 17, 2008, p. 3.
[64] SEC Release No. 34-58773, Amendments to Regulation SHO, Interim final temporary rule, October 17, 2008, p. 15 and SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, p. 12.
[65] SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, p. 1.
[66] SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, p. 1.

equity markets, Rule 204 applies to NSCC Clearing Members, with respect to their delivery obligations to the NSCC, and in particular their obligations in the CNS system.[67] Hence, Rule 204 applies to the Clearing Member's net obligation in a security, i.e. the net number of shares in a security that needs to be delivered to the NSCC as a result of the Clearing Member's net short or long position in that security in the CNS system on a given settlement day.[68]

47. For the remainder of this section of my report, I discuss Rule 204 in the context of a 3-day settlement cycle for equity securities. That is, assume the trade date is day T and the settlement date is day T+3, three settlement days later.

48. Rule 204(a) states the following:

> A participant of a registered clearing agency must deliver securities to a registered clearing agency for clearance and settlement on a long or short sale in any equity security by settlement date, or if a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security for a long or short sale transaction in that equity security, the participant shall, by no later than the beginning of regular trading hours on the settlement day following the settlement date, immediately close out its fail to deliver position by borrowing or purchasing securities of like kind and quantity.[69]

49. Thus, the Rule specifies that a Clearing Member must deliver securities for settlement by the settlement date (T+3), *or if the Clearing Member has a fail to deliver*, the Clearing Member shall immediately close out its FTD by market open on T+4 (the settlement day following the settlement date) by borrowing or purchasing shares of the securities.

50. Rule 204(a)(1) further states:

> If a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security and **the participant can demonstrate on its books and records that such fail to deliver position resulted from a long sale**, the participant shall by no later than the beginning of regular trading hours on the third consecutive settlement day following the settlement date, immediately close out the fail to deliver position by purchasing or borrowing securities of like kind and quantity.[70] (Emphasis added)

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[67] SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, p. 10. Note that the rule is silent with respect to any relationship the Clearing Member may have with non-broker dealer customers, or delivery obligations for non-broker dealer customers.

[68] The Rule also applies to equity securities only. See Answer to Question 1.4, Division of Market Regulation: Responses to Frequently Asked Questions Concerning Regulation SHO, April 10, 2012 http://www.sec.gov/divisions/marketreg/rule201faq.htm.

[69] SEC Regulation SHO Rule 204.

[70] SEC Regulation SHO Rule 204. In addition, if the fail to deliver position is attributable to bona fide market making activity by a registered market maker, options market maker, or other market maker, the Rule also permits closeout by the morning of the third settlement day following the settlement date. Furthermore, if the FTD position results from the sale of a security that a "person is deemed to own pursuant to § 242.200 and that such person intends to deliver as soon as all restrictions on delivery have been removed," then the Clearing Member

51. Rule 204 allows more time to close out an FTD (by market open on T+6, the third settlement day following the settlement date) if it can be demonstrated on the Clearing Member's books and records that the FTD resulted from a long sale. Thus, Clearing Members, in order to determine when close outs are required, should have systems in place that allocate FTDs to long sales vs. short sales. The Rule is predicated on the Clearing Member's ability to do such an allocation.[71] Thus, compliance with the Rule must, in part, be assessed with reference to the Clearing Member's allocation.

52. If nonetheless the Clearing Member is able to demonstrate on its books and records that the FTD results from long sales, then it must close out its FTD no later than market open on T+6. For instance (see Exhibit 5), a Clearing Member's correspondent client has a customer who on Monday (day T) sells 1,000 shares in a "long" sale of a stock that has been loaned out by the Clearing Member and no further trades occur in that week. The settlement date is Thursday (T+3), but the Member has no shares in its DTC account available for delivery. This puts the Clearing Member in a fail to deliver position. Rule 204(a) requires the Clearing Member to take action to close out the FTD by market open on Tuesday morning of the following week (T+6). Such actions include purchasing shares "of like kind and quantity" as the FTD position, or borrowing shares "of like kind and quantity" as the FTD position and making them available for settlement. If the Clearing Member takes any of these actions no later than the market open on T+6, then the Clearing Member has conformed to Rule 204 even though it had an FTD in the CNS system on T+3, T+4, and T+5.

53. Note that a Clearing Member's FTD may also resolve by market open on T+6, if for example, the Clearing Member obtains shares some other way (such as receipt of shares from a previous recall of an outstanding loan) and makes the shares available to the NSCC by the opening of trading on T+6.[72,73] Moreover, under certain conditions, Rule 204(e) provides for

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close-out requirement is extended to market open on the thirty-fifth calendar day following the trade date of the sale. Note that the provisions in Rule 204T(a)(1) differed from the ones cited here in that they allowed for closing out after the morning of T+6 only by purchasing shares, not by borrowing.

[71] See, for example, Testimony of Summer Faith Poldrack, August 10, 2011, pp. 21–22, 158–159.

[72] The Rule 204 Adopting Release specifies that "[i]n determining its close-out obligation, a participant may rely on its net delivery obligation as reflected in its notification from NSCC regarding its securities delivery and payment obligations, provided such notification is received prior to the beginning of regular trading hours on the applicable close-out date." SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, p. 22.

[73] Another possibility for resolving a Clearing Member's FTD is to find the securities somewhere else within the Clearing Member's organization, for instance an affiliate with its own DTC account, and deliver those securities to the NSCC by market open on T+6.

an exemption to the close-out requirement for "pre-fail credit," which I discuss further in Section VI.E.[74]

54. Additionally, neither Rule 204 nor Regulation SHO provide any guidelines on how to determine the "age" of an FTD position. This can be a complicated exercise, especially in instances when a Clearing Member incurs overlapping CNS delivery obligations on a series of successive settlement days. To illustrate (see Exhibit 6), first consider a Clearing Member that has no prior CNS balance in a security on Monday (day T). Customers of the Clearing Member's correspondents transact in the security as follows: sell long 100 shares on Monday, sell short 100 shares on Tuesday, and purchase 150 shares on Wednesday. Assume that there are no further trades in the security by the Clearing Member that week. On Thursday (T+3 relative to the long sale), if the Clearing Member has no shares available to deliver to the NSCC, it incurs an FTD of 100 shares. On Friday (T+4 relative to the long sale and T+3 relative to the short sale), the Clearing Member is still unable to deliver shares so that its FTD at the end of the day on Friday increases to 200 shares (100 shares from Monday's long sale plus 100 additional shares from Tuesday's short sale).

55. On Monday of the following week (T+5 relative to the long sale and T+4 relative to the short sale), the Clearing Member is entitled to receive 150 shares. This "receive" is due to the 150 share purchase from Wednesday of the previous week that is due to settle that second Monday (3 settlement days since Wednesday). Assume that no other trades are executed and no additional shares are received that day. As a result of the 150 share receive, the Clearing Member's FTD on the second Monday is reduced to 50 shares. Rule 204 does not specify whether this 50 share delivery obligation to the NSCC corresponds to the 100 shares from Monday's long sale or the 100 shares from Tuesday's short sale, or if it should be associated, in part, to Monday's long sale and, in part, to Tuesday's short sale. This is an important consideration because allocating the 50 share FTD to Monday's long sale means it would be counted towards a "T+5" long sale position, whereas allocating the 50 share FTD to Tuesday's short sale means the FTD would be counted towards a "T+4" short sale position. In the former case, Tuesday's short sale trade is closed out and the remaining FTD is associated with a T+5 long sale position, so that Rule 204(a) is not violated at this point. In the latter case, the share receipt is offset against the Monday long sale and the FTD is associated with Tuesday's short sale. In this case, the FTD position has aged to the end of

[74] Such an exemption, for example, can occur when the Clearing Member is entitled to receive shares from the NSCC on T+6.

day T+4, which constitutes a violation of Rule 204(a). This distinction would depend on the specific Clearing Member allocation algorithm, which Rule 204 does not specify.

56. The SEC Staff is aware of this issue and has provided some guidance on how to date FTD positions as it applies to Rule 203 in its "Responses to Frequently Asked Questions Concerning Regulation SHO" ("FAQ"), after the relevant period of the events in question in this matter.[75] In response to Question 5.8 in the FAQ, the Staff states that a net reduction in the FTD position on a given day, e.g. due to a delivery of shares that day, "may first apply the reduction to the most recent increase in its fail to deliver position...and then to any increase in its fails position that existed at NSCC on the day preceding that day and so forth ..."[76] Thus, the Staff specifies a last-in-first-out ("LIFO") method for resolving FTD positions. An exception applies if the Clearing Member closes out its FTD position as required by Rule 203.[77] In this case, the reduction is applied to the FTD position being closed out; superseding the LIFO approach.

57. This guidance provided by the FAQ only partially addresses the issue of allocating deliveries and settling purchases on existing FTD positions. Particularly, it does not offer any clarification regarding how to associate an FTD to short or long sales. As I explained earlier, this association to short or long sales can entail firm-specific choices that may differ among Clearing Members. Additionally, as the SEC Staff states, the guidance contained in the FAQ reflects the views of the SEC Staff and does not represent "rules, regulations, or statements of the Securities and Exchange Commission...."[78] Rule 204 itself is silent on this point.

C. Closing Out a Fail to Deliver

58. As described above, Rule 204 states that the Clearing Member must take action to close out FTD positions in the CNS system by market open on T+4 ("Compliance Deadline"), and if the Clearing Member can demonstrate in its books and records that the

[75] Division of Market Regulation: Responses to Frequently Asked Questions Concerning Regulation SHO, Question 5.8, April 10, 2012, http://www.sec.gov/divisions/marketreg/mrfaqregsho1204.htm.

[76] Question 5.8 states: "If a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in a threshold security at the end of each day for 13 consecutive settlement days, but during the 13-day period the participant experiences a reduction in its end of day fail to deliver position at NSCC, how should the participant apply that reduction to its open fail position(s)?"

[77] Question 5.8 in the FAQ refers to the delivery obligations in Rule 203, which was adopted in 2006 before Rule 204T took effect.

[78] The SEC Staff further states: "[T]he Commission has neither approved nor disapproved these interpretive answers." Division of Market Regulation: Responses to Frequently Asked Questions Concerning Regulation SHO," Question 5.8, April 10, 2012, http://www.sec.gov/divisions/marketreg/mrfaqregsho1204.htm.

FTD resulted from long sales, then the Compliance Deadline is extended to market open on T+6.[79]

Borrowing or Purchasing Shares

59. Rule 204 specifies two ways a Clearing Member can close out an FTD in a security.[80] One way is for the Clearing Member to borrow shares of the security by the Compliance Deadline. The second is for the Clearing Member to purchase shares of the security by the Compliance Deadline ("close-out purchases"). If the Clearing Member purchases shares of the security for its own account, it may choose to allocate the close out purchases to its correspondent clients, or to customers of its correspondent clients. These purchases are referred to as "buy-in" purchases.[81] The close out purchase must occur by the Compliance Deadline.

60. It is important to note that close out purchases will generally create a "receive" or positive position in the CNS system for the Clearing Member three settlement days after the purchase is executed, on the settlement date of the close-out purchase trades. Thus, although the Clearing Member would be in compliance with Rule 204 if the close out purchases were made by the Compliance Deadline, the member's FTD position in the CNS system could remain for an additional three settlement days after the purchase is executed.

CNS Buy-In

61. A Clearing Member's FTD may also be resolved when it is subjected to a "CNS buy-in." This situation results when the NSCC purchases securities and charges them to the Clearing Member with an FTD, a situation that is illustrated as follows. Suppose Clearing Member "A" has an FTD while another Clearing Member "B" has an FTR in the CNS

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[79] I note additional exceptions to the T+4 close-out requirement in Section VI.B above, as well as exemptions to the close-out requirement in Section VI.E below.

[80] Note that these means of closing out FTDs do not depend on whether the FTD is associated with a long sale or not.

[81] If the Clearing Member has lent out the security, it may also purchase shares of the security by subjecting a stock loan counterparty to a buy-in. To do this, the Clearing Member first has to issue a loan recall. If the counterparty to the stock loan fails to return the recalled shares by the recall deadline, typically three business days from the time of the recall, the Clearing Member may terminate the loan and purchase shares of the security. "The termination date established by a termination notice shall be a date no earlier than the standard settlement date that would apply to a purchase or sale of the Loaned Securities (in the case of a notice given by Lender) ... entered into at the time of such notice, which date shall, unless Borrower and Lender agree to the contrary, be (i) in the case of Government Securities, the next Business Day following such notice and (ii) in the case of all other Securities, the third Business Day following such notice." Master Securities Loan Agreement (2000 Version), p. 4. Penson used a standard form of securities lending agreement. "All of our securities borrowing and lending activities are performed under a standard form of securities lending agreement ...." Penson Form 10-K, FY 2009, p. 12.

system. Clearing Member "B" may choose to submit a buy-in notice to the NSCC. Upon receipt of the buy-in notice, the NSCC requires Clearing Member A to deliver the outstanding shares owed to the NSCC.[82] If Clearing Member A does not deliver the shares, the NSCC will execute the CNS buy-in by purchasing a sufficient quantity of the security in the open market and charging Clearing Member A for the purchase.[83] This would be equivalent to Clearing Member "A" purchasing the securities for its own account, effectively closing out its FTD.

Purchases Independent of Close-Out Purchases

62. It is also possible to resolve a CNS FTD position with shares delivered via unrelated purchases of a Clearing Member's correspondent clients or the customers of its correspondents. Such purchases can result in "flattening" the member's position in the CNS system. In these situations, the purchases generate a receive in the CNS system three settlement days after the purchase, and at that time, the receive offsets the Clearing Member's FTD position.

63. For example, suppose a Clearing Member that has a CNS flat position on Monday incurs an FTD in a security at the end of the day on Wednesday (T+3) that can be associated with a long sale from Friday of the previous week. Further suppose that on Monday (T+1 for the original trade), some of the Clearing Member's correspondent clients or customers of its correspondent clients happened to buy an amount of shares of the security equal to the Clearing Member's FTD on Wednesday, and that those are the only trades in that security that week. These purchases would generate a receive in the CNS system on Thursday (three settlement days after Monday) and resolve the Clearing Member's FTD (T+4 for the original trade), assuming the FTD persists until then.

64. Note that these methods of closing out an FTD are not mutually exclusive and that an FTD can be closed out using a combination of these methods.

D. Persistent Fails to Deliver Can Be Consistent with Rule 204 Compliance

65. It is important to note that the occurrence of persistent FTD positions in the CNS system can be consistent with Rule 204 compliance. Rule 204 permits the Clearing Member

[82] National Securities Clearing Corporation, Rules and Procedures, Procedure VII.J.1, Effective October 30, 2009.
[83] National Securities Clearing Corporation, Rules and Procedures, Procedure X.A.1, Effective October 30, 2009.

to close out an FTD resulting from a long sale of securities with the purchase of shares of the security by market open on T+6. Because of the three-day settlement delay between the execution and settlement of the close out purchase, this means that an FTD can persist in the CNS system until T+9, i.e. for six consecutive settlement days, even if the Clearing Member is in full compliance with Rule 204.

66. To illustrate (see Exhibit 7), suppose that on Monday (day T) a correspondent's customer sells long 1,000 shares of a stock that has been loaned by the Clearing Member, and those are the only trades on Monday. Assume the Clearing Member has an FTD on Thursday (T+3), and buys shares to resolve the FTD on the morning of Tuesday of the following week (T+6). The buy-in trade settles three settlement days later, on Friday of the following week (T+9 relative to the original trade). In this example, the Clearing Member was fully compliant with Rule 204(a) but had an FTD on six consecutive days from T+3 to T+8.

67. Also, the Clearing Member may simultaneously have new delivery obligations resulting from the trading of the same or other correspondents' customers and the Clearing Member's FTD may persist. Thus, an FTD in a Clearing Member's CNS account, even if it occurs for multiple consecutive days, does not necessarily mean that the Clearing Member was not in compliance with Rule 204.[84] Consequently, persistent fails to deliver in the CNS system cannot be used to infer the occurrence of Rule 204 violations.

E. Additional Rule 204 Provisions

Allocation to other Broker-Dealers — Rule 204(d)

68. Under certain conditions, subsection (d) of Rule 204 allows the Clearing Member to allocate FTD positions to other registered broker-dealers for which it clears trades or from which it receives trades for settlement if those correspondent broker-dealers have a short position in the security. In such situations, the provisions of Rule 204 apply to the correspondent broker-dealer that was allocated the FTD, and not to the Clearing Member. If an allocation is made, failure to close out the CNS obligation, and hence non-compliance with Rule 204, would be attributed to the correspondent broker-dealer and not to the Clearing Member.[85-86]

[84] Division of Market Regulation: Responses to Frequently Asked Questions Concerning Regulation SHO, Question 5.8, explains this logic in the context of Rule 203.
[85] See Government Exhibit 70 for examples of Penson allocating FTDs to its correspondent clients, PFSI1136754–61 at 55–6.
[86] SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, pp. 27–30.

Pre-Fail Credit — Rule 204(e)

69. According to subsection (e) of Rule 204, a Clearing Member who has not closed out an FTD in accordance with subsection (a) or allocated it according to sub-section (d), under certain conditions, is not in violation of Rule 204(a) if the Clearing Member purchases or borrows the securities between T+1, and the end of trading hours on the settlement day, T+3. These conditions include that the trade or borrow is bona fide, that the Clearing Member has a net flat or long CNS position on the day of the purchase or borrow, and that the purchase or borrow is of sufficient quantity to close out the Clearing Member's entire FTD position ("Pre-Fail Credit").[87,88]

Penalty Box – Rule 204(b)

70. Rule 204(b) provides provisions for the case when a Clearing Member violates the close out requirements of Rule 204(a) for a certain security. It specifies that in this case, and under certain conditions, the Clearing Member and any correspondent broker-dealer may no longer execute short sales in this security without first borrowing or arranging to borrow the security (the security is said to be placed in the "penalty box").[89] Once the Clearing Member closes out the FTD in question by a purchase of the security in question and once the close out purchase clears and settles, the security is taken out of the penalty box.[90]

VII. Rebuttal of the Harris Report

71. In this section I provide an overview of Professor Harris' methodology and address calculation errors made by Professor Harris, as well as unsupported assumptions in his methodology. First, I show that Professor Harris inflates his estimated "gain" (or "benefit") to Penson from his alleged 204(a) violations by a factor of 100 due to a calculation error and he incorrectly ages CNS positions on Columbus Day and Veterans Day. Second, I show that Professor Harris' data and methodology are unreliable which places doubt on the reliability of Professor Harris' results. Third, I address Professor Harris' characterizations of the

[87] SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, pp. 34–37.
[88] Rule 204T(e) did give Pre-Fail Credit only for purchases and required purchases to be of sufficient quantity to cover the Clearing Member's entire short position.
[89] Amal Aly, Comment Letter, Amendments to Regulation SHO – Rule 204T, SIFMA, December 16, 2008, pp. 3–4.
[90] SEC Release No. 34-60388, Amendments to Regulation SHO, Final Rule, July 31, 2009, pp. 30–33.

consequences of delivery failures. Fourth, I show that Professor Harris' number of alleged Rule 204(a) violations he identifies is small compared to the number of trades that Penson cleared. Finally, I show that the majority of Professor Harris' estimated gain to Penson, on top of being inflated one hundredfold, is attributable to only a small number of his calculated Rule 204(a) violations.

A. Overview of Professor Harris' Methodology

72. Exhibit 1 of the Harris Report contains the table of results of Professor Harris' analysis of Penson's alleged Rule 204(a) violations on long sales of loaned out securities. This exhibit includes estimates for the number of alleged violations as well as the alleged benefit to Penson of these violations. In calculating these estimates, Professor Harris employs a methodology that, on a simplified basis, follows the following steps:[91]

1. Identify close of T+5 aged CNS FTDs;[92]
2. Adjust CNS FTDs by the net settling trades on T+6 (if positive);
3. Remove short sales from these CNS FTDs and verify long sales existed in the trade blotter;
4. Match the remaining CNS FTDs with Penson's loan data to determine potential Rule 204(a) violations associated with loaned securities;
5. Estimate the benefit to Penson using the one day loan income earned by not recalling on T+2 (Method A) and the one day borrowing cost avoided by not borrowing by market open on T+6 (Method B).

B. Errors in Professor Harris' Calculations

1. Professor Harris' benefit calculations have a computer coding error that overstates his results by a factor of 100

73. Professor Harris provides a calculation of the purported benefit to Penson from "failing to borrow or purchase [certain securities to close-out long sale delivery fails] by the

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[91] Harris Report, ¶¶102–126.
[92] Professor Harris refers to the close of T+5 CNS position as "T+6 CNS Market Open." However, this nomenclature is confusing and ambiguous because "T+6 CNS Market Open" does not correspond to the CNS position as of market open for trading on T+6, which is relevant for determining Rule 204(a) violations. As Professor Harris points out, the "T+6 CNS Market Open" position is simply the closing CNS position on T+5. See, for example, Harris Report, ¶¶102, 111.

Close-Out Deadline," when Penson had lent shares in the same securities, during the period of October 1, 2008 through October 31, 2011.[93] In Exhibit 1 of the Harris Report, Professor Harris calculates these benefits as an average gain to Penson of approximately $6.2 million.

74. However, Professor Harris' calculations contain an error that overstates his calculation of Penson's benefit by a factor of 100. When the error is corrected, Professor Harris' calculation of the average gain to Penson is reduced from $6.2 million to $62 thousand over the three-year period.[94]

75. Professor Harris' calculation error regards how Penson reports its borrowing and lending rates in the stock loan data. Professor Harris performs his Methods A and B gains calculations using the rebate rates contained in Penson's stock loan data. The rates in the stock loan data files are presented in percentage points. Thus a rebate rate of 5.0% is represented in the data as 5.0. Professor Harris performs his calculations as if the percentage figure was instead represented in the data as 0.05, and he fails to divide the rebate rates by 100 in his calculations.

76. I have reviewed Professor Harris' computer code and confirmed that he does not properly divide the rebate rates by 100 for any of the alleged Rule 204(a) violations.[95] As a consequence, all the gain estimates presented in Exhibit 1 of the Harris Report overstate the results of Professor Harris' methodology by a factor of 100.

77. To illustrate the proper use of the lending rates in the stock loan data, I provide the following example using CUSIP 001712108—described as "AMICAS INC." by the SIAC 012 Report ("CNS report"). Professor Harris purports that Penson earned $447 on May 4, 2010 (using his Method A) by failing to deliver shares of AMICAS INC. by market open on T+6. To calculate this benefit, Professor Harris first estimates the value of the alleged violating shares to be $80,500 by multiplying the number of violating shares and the contract price.[96] Since there is only one loan in the lending data on May 3, 2010 associated with AMICAS INC, Professor Harris multiples the $80,500 value of the alleged violating shares

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[93] Harris Report, ¶¶21, 23–26.

[94] Calculation is based on the average of Professor Harris' Methods A and B and the average of his Methods II and III.

[95] Professor Harris Production Files. In addition, Professor Harris provides his equations for estimating gains under his Methods A and B in paragraphs 161 and 162 of his report. In both equations, it is evident that he does not correctly divide the rebate rates by 100. For example, Professor Harris' formula for estimating Penson's gains under his Method A is $Fee_c^s = P_{c-1}^s \times ViolationQ_c^s \times \frac{LendRate_{c-1}^s}{360} \times Days_c$. To correctly adjust for the formatting of the rebate rates, Professor Harris' formula should have been $Fee_c^s = P_{c-1}^s \times ViolationQ_c^s \times \frac{LendRate_{c-1}^s}{360 \times 100} \times Days_c$. Harris Report, ¶¶161–162.

[96] The contract price is calculated from Penson's loan data by dividing the total dollar amount on loan by the total quantity of shares on loan as of T+5.

by the 2.0% per year rate for the AMICAS INC share loan (which is represented by a -2.0 in the data). After dividing the annual rate by 360, he calculates a benefit of $447. However, Professor Harris calculation uses 2.0 for the lending rate instead of 0.02. By neglecting to divide the lending rate by 100, Professor Harris' calculations use a lending rate of 200.0% instead of 2.0%. When the lending rate is properly divided by 100, the resulting revenue gain under Professor Harris' Method A is $4.47.[97] Professor Harris' error can also be seen through dividing his $447.22 one-day calculated benefit by the $80,500 value of violating shares to arrive at a one-day return of 0.556%. The resulting 0.556% one-day return is equivalent to a 200.0% annual rate. This is one example; however, I was able to determine this error persists in every Rule 204(a) violation identified in Professor Harris' report.

78. The first column in Exhibit 8 in this report contains values copied from Exhibit 1 of the Harris Report. The second column in Exhibit 8 shows the impact of correcting for the "failing to divide by 100" error in Professor Harris' calculations. The final row of the first column shows that Professor Harris calculated an average gain of $6,165,096. The corrected calculation in the final row of the second column of Exhibit 8 reduces Professor Harris' average gain calculation to $61,651. The reduced level of Professor Harris' calculated benefit places in a different light his statements that suggest Penson was actively seeking economic benefit through its close out procedures.[98] To place Professor Harris' corrected three-year average benefit in an economic context, the $61,651 estimate of putative benefit it is only 0.08% of the $77.0 million revenue that Penson's Stock Loan Department generated over the same time period.[99]

2. Professor Harris' calculations do not account for Columbus Day and Veterans Day

79. Professor Harris' calculations are unreliable and inflate the number of alleged Rule 204(a) violations as they do not account for trading days that are not settlement days. Because clearing entities are banks, they are closed on bank holidays and the clearing of equity transactions cannot take place on bank holidays that are trading days but not settlement days. Noting that there are a number of days in the relevant period for which CNS reports are

[97] Furthermore, Penson's lending data show that Penson earned $4.47 by lending these shares for one day.
[98] See, for example, Harris Report ¶28.
[99] SEC Results III.XLSX.

missing,[100] Professor Harris fills in information for the CNS reports that he identified as missing in order to age Penson's CNS positions.[101] However, the language in the Rule 204 close out requirements is specific to settlement days:

> [I]f a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security for a long or short sale transaction in that equity security, the participant shall, by no later than the beginning of regular trading hours **on the settlement day following the settlement date**, immediately close out its fail to deliver position by borrowing or purchasing securities of like kind and quantity …
>
> If a participant of a registered clearing agency has a fail to deliver position at a registered clearing agency in any equity security and the participant can demonstrate on its books and records that such fail to deliver position resulted from a long sale, the participant shall by no later than the beginning of regular trading hours **on the third consecutive settlement day following the settlement date,** immediately close out the fail to deliver position by purchasing or borrowing securities of like kind and quantity….[102] (Emphasis added)

80. Professor Harris' adjustment for missing CNS reports incorrectly assumes that all trading days are settlement days, and he incorrectly states in his report that "all settlement days are trading days and vice versa."[103] Rule 203(c)(5) of Regulation SHO defines a settlement day as "any business day on which deliveries of securities and payments of money may be made through the facilities of a registered clearing agency."[104] The NSCC and DTC do not operate on bank holidays, and hence, do not settle trades on these days.[105] There are two bank holidays, Columbus Day in October and Veterans Day in November, when U.S. equity markets remain open.[106] While these two holidays are "trading days," they should not be considered "CNS settlement days."

81. By filling in CNS data for Columbus Day and Veterans Day, Professor Harris inappropriately ages Penson's CNS FTD positions on these holidays. To illustrate the impact

[100] Harris Report, ¶110.
[101] Harris Report, ¶110.
[102] Regulation SHO Rule 204(a).
[103] Harris Report, ¶16.
[104] SEC Rule 203(c)(5).
[105] See, for example, Year 2009 Anticipated Holiday Schedule, The Depository Trust Company, January 9, 2009.
[106] "NYSE Holidays and Trading Hours," https://www.nyse.com/markets/hours-calendars, accessed on October 14, 2014; "5 U.S. Code § 6103 - Holidays," http://www.law.cornell.edu/uscode/text/5/6103, accessed on October 14, 2014.

of filling in data for Columbus Day, I provide the following example using total net sales of 264 shares for CUSIP 00208J108—described as "ATP Oil & Gas Corporation" by the CNS reports—on October 6, 2011. Professor Harris assumes that the settlement date for these trades was three trading days later on October 11, 2011. However, October 10, 2011 was Columbus Day and, as previously discussed, was not a settlement day. The "settlement date" variable in the trade blotter data shows that the trades executed on October 6, 2011 for ATP Oil & Gas Corporation were scheduled to settle on October 12, 2011. By filling in data for Columbus Day (October 10, 2011), Professor Harris determines day T+6 for these transactions to be October 14, 2011 instead of the correct date October 17, 2011. Professor Harris estimates a CNS position as of market open (adjusted for settling trades) of -3,511 shares on October 14, 2011 and attributes 264 of these shares to long sales with loaned shares. However, Penson delivered 4,611 shares to the NSCC on October 14, 2011, covering Penson's -3,511 opening position and its -1,100 settling trade obligation on that day. Had Professor Harris appropriately accounted for Columbus Day as a bank holiday and looked at Penson's closing position of ATP Oil & Gas Corporation on October 14, 2011, he would not have identified this position as a Rule 204(a) violation as Penson was "CNS flat" with an opening position of zero on October 17, 2011.

82. As a result of not accounting for bank holidays, Professor Harris incorrectly classifies an average of 73 FTDs as violations using his Methods II and III, which is 4.3% of the total number of violations that he identifies. The final row of the third column of Exhibit 8 shows that Professor Harris' calculation of the average gain to Penson is reduced by 3.8% to $59,323 after appropriately accounting for bank holidays.[107]

83. I have also been asked by counsel to separately identify and analyze the portion of the purported gain or benefit to Penson, using Professor Harris' methodology and calculations (correcting for the errors described above), for which there may be a legal defect or bar to recovery, such as application of the statute of limitations. I have been asked to assume for this separate analysis that the period for which there may be a legal bar to recovery is October 1, 2008 through May 21, 2009. To the extent it is established that there is a legal defect or bar to recovery during this period, the purported benefit amount to Penson, under Professor

[107] Calculation is based on the average of Professor Harris' Methods A and B and the average of his Methods II and III.

Harris' methodology and corrected calculations, would be further reduced by $4,753 to $54,571.[108]

C. Professor Harris' Methodology and Data are Unreliable

1. There is trading activity in the CNS reports that is not reflected in the trade blotter used by Professor Harris

84. Professor Harris' analysis relies on the completeness of Penson's trade blotter which he states "provides a record of every trade Penson arranged."[109] Professor Harris uses the trade blotter on day T to determine whether a negative CNS position at the close of T+5 was attributable to a short or long sale. Professor Harris first attributes a negative CNS position at the close of T+5 to short sales on day T which are recorded in the trade blotter. If the total number of shares related to short sales activity in the trade blotter is less than his estimated negative CNS position at the close of T+5, Professor Harris then attributes the CNS position to long sales on day T and also limits the number of shares in potential Rule 204(a) violation to the amount of long sale activity in the trade blotter on day T.

85. A comparison of the trade blotter data to the CNS reports shows that the trade blotter is not a complete record of all trades arranged by Penson. My review of the entries in Penson's trade blotter relative to the CNS reports revealed that there were entries for net "settling trades" in the CNS report that did not correspond to trades in Penson's trade blotter that were marked to settle on the date indicated in the CNS report. Specifically, I found that there were no corresponding trades in Penson's trade blotter for 9.2% of the equity security-settlement date combinations with settling trades in the CNS reports from October 1, 2008 through October 31, 2011. For example, using CUSIP 67030P107—described as "Nuclear Solutions Inc." by the CNS Reports—shows net settling trades of -9,800 on July 10, 2009; however, there are no corresponding trades in this security settling on July 10, 2009 according to Penson's trade blotter.

86. Professor Harris' reconstruction of Penson's settlement process is based on combining data in Penson's CNS reports, trade blotter, and stock loan data.[110] Professor Harris states that the CNS system does not identify whether net settling trades are composed of long or

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[108] The purported benefit amount to Penson would be $56,805 if I did not account for Columbus Day and Veterans Day. Calculation is based on the average of Professor Harris' Methods A and B and the average of his Methods II and III. This analysis includes trades with settlement dates from May 22, 2009 to October 31, 2011.

[109] Harris Report, ¶90.

[110] Harris Report, ¶84.

short sales, thus "[t]his information must be inferred from the trade blotter."[111] My analysis shows that the trade blotter data are incomplete; hence Professor Harris cannot reliably attribute FTDs to trades, even using his own methodology. It is possible that Professor Harris will attribute negative CNS positions at the close of T+5 to a long sale instead of a short sale transaction if, for example, a short sale trade is among the missing data in the trade blotter. Consider the hypothetical example of Professor Harris estimating that there is a negative CNS position of 1,000 shares as of the close of T+5. If Professor Harris does not find any short sales on day T in the trade blotter, but does find at least 1,000 shares related to long sales, he attributes the negative CNS position to long sales. If Professor Harris also determines that the long sales were associated with loans as of T+5, his methodology would classify the 1,000 share negative CNS position as a Rule 204(a) violation.[112] However, if there were 2,000 shares in short sales on day T, Professor Harris' methodology would allocate the negative CNS position to the short sales and not classify the position as a Rule 204(a) violation. In this example, Professor Harris' result is dependent on the completeness of the trade blotter data. If the day T short sales were missing from the trade blotter, Professor Harris would have incorrectly identified the negative CNS position as a violation of Rule 204(a).

87. Because Professor Harris' methodology is dependent on the completeness of the trade blotter, the validity of his conclusions is necessarily dependent upon an assumption that the trade blotter is complete. However, as detailed above, this assumption is faulty because the trade blotter is missing transactions for many security-settlement date combinations according to the CNS reports used by Professor Harris. This undermines Professor Harris' methodology and, ultimately, renders his conclusions unreliable.

2. Professor Harris' calculations are dependent on his assumption that Penson's close-outs on T+6 did not occur before market open

88. To identify Rule 204(a) violations for long sales associated with loaned securities, Professor Harris estimates Penson's "T+6 CNS Market Open Delivery Failures" by taking Penson's CNS closing position on T+5 and adding to this closing position the T+6 net settling trades. The adjustment he makes of adding T+6 net settling trades to the T+5 closing

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[111] Harris Report, ¶97.

[112] This assumes that T+6 net settling trades do not offset the 1,000 share negative CNS position.

position does not account for any shares Penson delivered to the NSCC before market open on T+6. If Penson delivered shares prior to market open on T+6, Professor Harris' estimate of Penson's T+6 CNS Market Open Delivery Failures would not reflect these share deliveries and he would have incorrectly classified certain delivery failures as Rule 204(a) violations.

89. Professor Harris himself states that "[s]hares can be processed before the beginning of regular trading hours."[113] For example, the day cycle for settling trades through CNS begins approximately at 7:00am—two and a half hours before market open.[114] In addition CNS has a night cycle that processes trades overnight.[115] While he has acknowledged that share deliveries can occur before market open, the CNS reports that Professor Harris relies on do not have the level of detail to allow him to determine whether or not shares were delivered by Penson to the NSCC after market close on T+5 but before market open on T+6. The T+6 CNS reports would only reflect these share deliveries in the end of day T+6 CNS positions.

90. As Professor Harris states, "many of these fails ultimately settled on T+6 but after the Close-out Deadline..."[116] While Professor Harris notes that many of the alleged Rule 204(a) violations he identifies close-out on T+6, he must rely on his "understanding" that Penson did not borrow shares, receive and deliver shares, or buy-in before market open to state that the fails that settled on T+6 did not occur "by the Close-out Deadline."[117] However, he has provided no basis for this "understanding" that identifies all close-outs that settled on T+6 as Rule 204(a) violations.

D. Professor Harris' Characterizations of Consequences of FTDs are Unsupported

91. Professor Harris states in his discussion of public policy issues that a failure to deliver shares is a serious problem for investors.[118] He claims that "[t]he buyer of a stock does not

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[113] He further states: "[S]hares that Penson may borrow and receive before the start of trading will affect its settlement position. Such transactions are not reflected in the SIAC 12 Report opening position, but they appear in the receipts reported for that day." Harris Report, ¶95.
[114] Securities and Exchange Commission, Release No. 34-50026; File No. SR-NSCC-2004-01, July 15, 2004, p. 2.
[115] See, for example, Securities and Exchange Commission, Release No. 34-50026; File No. SR-NSCC-2004-01, July 15, 2004, p. 2.
[116] Harris Report, ¶27. Professor Harris also relies on his "understanding" that "Penson did not buy-in to settle T+6 long sale failures before the beginning of normal trading hours on T+6 or on earlier dates," when classifying his violations. Harris Report, ¶114. However, the Harris Report does not contain any data analysis regarding whether Penson bought-in to settle long sale FTDs before market open on T+6. If Penson did execute buy-ins to settle long sale FTDs before market open on T+6, these would not be reflected on a CNS report until generally three days later (on their settlement date), and Professor Harris would potentially have incorrectly classified a CNS position as a Rule 204(a) violation.
[117] Harris Report, ¶¶54, 95, 113–114.
[118] Harris Report, ¶62.

obtain the right to receive dividends, vote the stock, or lend the stock until the trade settles. Had buyers in failed transactions been aware that they would not settle on time, they might not have entered the transactions or they might have done so on different terms."[119] In making these claims, Professor Harris ignores certain institutional features and/or techniques that would mitigate this alleged harm, including: a) brokers' allocation of "payments in lieu of dividends" to non-taxable clients, b) brokers' allocation of voting rights based on completion of the Voting Instruction Form by beneficial owners, and c) CNS buy-ins that can be requested by the Clearing Member with a CNS fail to receive position. These three institutional practices serve to mitigate the alleged harm claimed by Professor Harris.

E. Professor Harris' Number of Alleged Rule 204(a) Violations is Small Compared to the Number of Trades Cleared by Penson

92. The number of Rule 204(a) violations identified in the Harris Report is small when compared to the number of transactions cleared by Penson between October 1, 2008 and October 31, 2011.[120] For example, Penson's 10-Ks over this period state that the Company cleared between 1.0 million and 1.3 million equity transactions each day.[121] Further, the data employed by Professor Harris show that there were a total of 83.6 million long sale transactions contained in the trade blotter that could be potentially associated with loaned shares over the time period that Professor Harris analyzes.[122] Out of these 83.6 million long sale transactions, I find that only 0.12% could be potentially associated with a negative CNS position that was identified by Professor Harris as an alleged Rule 204(a) violation using his Method II.[123] In other words, only approximately 1 out of 800 long sale trades potentially

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[119] Harris Report, ¶18.
[120] Calculation is based on the average of Professor Harris' Methods II and III.
[121] Penson Form 10-K, FY 2008, p. 7; Penson Form 10-K, FY 2009, p. 7; Penson Form 10-K, FY 2010, p. 8; Penson Form 10-K, FY 2011, p. 6.
[122] Long sales are identified by using Type 0 and Type 2 accounts. To identify the long sales for securities in which Penson has shares on loan, I match long sales in Penson's trade blotter to the loans outstanding in Penson's lending data using the trade settlement date.
[123] Similarly, I find that only 0.15% of the 83.6 million long sale transactions could be potentially contributed to an alleged Rule 204(a) violations using Professor Harris' Method III. Calculations account for Columbus Day and Veterans Day. To identify the number of long sale transactions that contributed to Professor Harris' estimated Rule 204(a) violations, I match Professor Harris' alleged Rule 204(a) violations for each of his methods as of the trade date to long sales in the same security in Penson's trading blotter. To identify the total number of long sale transactions potentially associated with loaned shares (regardless of whether they contributed to Professor Harris' estimated Rule 204(a) violations), I count the number of long sale transactions in Penson's trade blotter that also have loaned shares of the same CUSIP in Penson's lending data on the date corresponding to the trade settlement date.

associated with loaned shares contributed to a Rule 204(a) violation as identified by Professor Harris.[124,125]

93. Furthermore, I find that the 1,572 negative CNS positions that Professor Harris identified as alleged violations using his Method II represented only 0.68% of the total number of Penson's CNS net sell settling positions potentially associated with loaned shares over the time period Professor Harris analyzed.[126]

F. The Majority of Professor Harris' Estimated "Benefit" to Penson is Attributable to Only a Small Number of his Identified Rule 204(a) Violations

94. It is notable that the vast majority of Professor Harris' alleged Rule 204(a) violations had a *de minimis* alleged economic benefit. As depicted in Exhibit 9, Professor Harris' calculated "benefit" is less than $1.00 for almost half of the alleged Rule 204(a) violations that he identifies and is less than $10.00 for almost three-fourths of the alleged violations. Further, the majority of Professor Harris' estimated "benefit" to Penson is attributable to only a small number of his calculated Rule 204(a) violations. One-third of Professor Harris' estimated "benefit" is attributable to no more than a dozen violations.[127] In addition, half of the estimated benefit that Professor Harris calculates is attributable to fewer than 30 violations.[128]

Executed this 14th of October, 2014

Erik R. Sirri

[124] Calculation uses Professor Harris' Method II. Approximately 1 out of 650 long sale trades potentially associated with loaned shares contributed to a Rule 204(a) violation as identified by Professor Harris' Method III.
[125] As explained earlier in my report, Rule 204(a) violations correspond to net positions—not individual transactions. Therefore, many individual transactions may contribute to only one Rule 204(a) violation.
[126] Similarly, I find that the 1,690 negative CNS positions that Professor Harris identified as alleged violations using his Method III represented only 0.72% of total number of Penson's CNS net sell settling positions potentially associated with loaned shares over the time period Professor Harris analyzed. Calculations account for Columbus Day and Veterans Day.
[127] Using the average of Professor Harris' Methods A and B and accounting for Columbus Day and Veterans Day, 33.6% of Professor Harris' estimated "gain" is attributable to only 9 observations using his Method II and 34.2% of Professor Harris' estimated "gain" is attributable to only 12 observations using his Method III.
[128] Using the average of Professor Harris' Methods A and B and accounting for Columbus Day and Veterans Day, 50.3% of Professor Harris' estimated "gain" is attributable to only 23 observations using his Method II and 50.5% of Professor Harris' estimated "gain" is attributable to only 29 observations using his Method III.

APPENDIX A

Erik R. Sirri

[redacted]

[redacted]
sirri@babson.edu

Education
University of California, Los Angeles: Ph.D., Finance, 1990.
University of California, Irvine: M.B.A., 1984.
California Institute of Technology: Bachelor of Science, Astronomy, 1979.

Employment
Professor
Babson College, Babson Park, MA, 2004-present.

Visiting Professor
Harvard Business School, Cambridge, MA, 2009-2010.

Director, Division of Trading and Markets
U.S. Securities and Exchange Commission, Washington, D.C., 2006-2009.

Visiting Scholar
Harvard Law School, Cambridge, MA, 2005-2006.

Associate Professor
Babson College, Babson Park, MA, 1999-2004.

Chief Economist
U.S. Securities and Exchange Commission, Washington, D.C., 1996-1999

Assistant Professor
Babson College, Babson Park, MA, 1995-1996.

Assistant Professor
Harvard Business School, Boston, MA, 1989-1995.

Research Scientist
Nichols Research Corporation, Newport Beach, California, 1979-1983.

Academic Articles
Comment on "Tax-Subsidized Underpricing: Issuers and Underwriters in the Market for Build America Bonds by Richard C. Green, Dario Cestau, and Norman Schürhoff," *Journal of Monetary Economics*, v. 60, n. 5, July 2013.

"Regulatory Politics and Short Selling," *University of Pittsburgh Law Review*, 2010, Vol. 71, No. 3, pp. 517-544.

"Consolidation and Competition in U.S. Equity Markets," with Robert L.D. Colby, *Capital Markets Law Journal*, 2010, Vol. 5, No. 2, pp. 169-196.

"Transparency and Liquidity: A Controlled Experiment on Corporate Bonds," with Edie Hotchkiss and Michael Goldstein, *Review of Financial Studies*, 2007, Vol. 20, No. 2., 235-273.

"Investment Banks, Scope, and Unavoidable Conflicts of Interest," *Economic Review*, Federal Reserve Bank of Atlanta, Fourth Quarter 2004, pp. 23-35.

"Roundtable on Corporate Disclosure," *Journal of Applied Corporate Finance*, 16(4), Fall 2004, pp. 36-62.

"Order Preferencing and Market Quality on U.S. Equity Exchanges," with Mark Peterson, *Review of Financial Studies*, 2003, vol. 16, No. 2, 385-415.

"Evaluation of the Biases in Execution Cost Estimation Using Trade and Quote Data," with Mark Peterson, *Journal of Financial Markets*, 2003, Vol. 6, No. 3, 259-280.

"Order Submission Strategy and the Curious Case of Marketable Limit Orders," with Mark Peterson, *Journal of Financial and Quantitative Analysis*, 2002, Vol. 37, No. 2, 221-241.

"Stern Stewart Roundtable on Capital Structure and Stock Repurchases," with Clifford Smith, Tim Opler, David Ikenberry, Richard Thevenet, Dennis Soter, *Journal of Applied Corporate Finance*, 2001, Vol. 14, No. 1, 8-41.

"Costly Search and Mutual Fund Flows," with Peter Tufano, *Journal of Finance*, 1998, Vol. 53, No. 5, 1589-1622.

"Express Lane or Tollbooth in the Desert? The SEC's Framework for Security Issuance," with Jennifer E. Bethel, *Journal of Applied Corporate Finance*, Spring 1998.

"The Reaction of Investors and Stock Prices to Insider Trading," with Bradford Cornell, *Journal of Finance*, 1992, Vol. 47, No. 3, 1031-1059.

Book Chapters and Other Writings

"Report on Secondary Market Trading in the Municipal Securities Market," for the Municipal Securities Rulemaking Board, July 2014.

"The Importance of Financial Policy Makers Making Informed Decisions," with Jennifer E. Bethel, in *Current Perspectives on Modern Equity Markets*, Knight Capital Markets, December 2010.

"Examining the Main Street Benefits of our Modern Capital Markets," with Charles M. Jones, report for the Center for Capital Markets Competitiveness, U.S. Chamber of Commerce, March 2010.

"The Future of Stock Exchanges," *AIMR Conference Proceedings on Best Execution and Portfolio Performance*, December 2000, 81-90.

"Comment on Circuit Breakers, Systemic Risk, and Market Reforms," in Brookings/Wharton Papers on Financial Services, Robert Litan and Anthony Santomero, Editors, Brookings Institution Press, June 1998.

"The Economics of Pooling," with Peter Tufano, in *The Global Financial System: A Functional Perspective*, Harvard Business School Press, 1995.

"Competition and Change in the Mutual Fund Industry," with Peter Tufano, in *Financial Services: Perspectives and Challenges for the 1990s*, edited by S.L. Hayes III, HBS Press, 1993. (Republished in *Gestion Collective Internationale*, No. 10, Summer 1994)

"Anheuser-Busch and Campbell Taggart," in *Case Problems in Finance*, Fruhan, William E., et. al, Tenth Edition, Irwin, 1992.

Boards and Affiliations
Shadow Financial Regulatory Committee, 2014-present
Financial Economists Roundtable, 2014-present
Governing Counsel, Independent Directors Counsel (IDC), 2011-present
Town of Sherborn, Advisory (Finance) Committee, 2011-2013
Board Member, Managed Funds Association, 2010-2012
SEC Historical Society, Museum Committee, 2009-present
Investment Committee, Foundation for Metrowest, 2010 to present
Trustee, Natixis, Loomis Sayles, and Hansberger Funds, 2009-present
Board Member, Boston Options Exchange (Regulatory), 2004-2006
Governor, Boston Stock Exchange, 2003-2006
Proxy Governance, Inc. Advisory Board, 2004-2006
National Association of Securities Dealers: Economic Advisory Board, 2001-2005
Nasdaq Stock Market: Economic Advisory Board, 2000-2002
Member, Society of Financial Studies
Member, American Finance Association

Professional Activities
Refereed for *Journal of Finance, Journal of Financial Economics, Review of Financial Studies, Journal of Business, Management Science. Journal of Financial Intermediation, Journal of Banking and Finance, Journal of Business and Economic Statistics, Quarterly Journal of Business and Economics, Journal of Financial Services Research.*

Independent Fee Consultant for Bank of America Columbia Funds and Nations Funds, as appointed by the New York Attorney General pursuant to a regulatory settlement, 2005-2006

NASD Ahead of the Curve Committee, Member, 2005-2006

NASD Taskforce on Mutual Fund Soft Dollars and Distribution Fees, Member, 2004

Appointed an "Independent Economist" by the NASD to use TRACE bond data to assess the effects of transparency on fixed income market liquidity, 2003-2005

NASD Taskforce on Mutual Fund Breakpoints, Member, 2003

AIMR Trade Management Guidelines Taskforce, Member, 2001

Erik Sirri litigation testimony in the previous 4 years

Justin Scott v. Putnam LLC, et al., Civil Action No. 11-cv-11082-RWZ, United States District Court, District of Massachusetts, Deposition Testimony (2014).

Securities and Exchange Commission vs. Samuel E. Wyly, et al., United States District Court, Southern District of New York, Civil Action No. 10 Civ. 5760 (SAS), Deposition Testimony (2013), Deposition Testimony (2014).

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In Re Evergreen Ultra Short Opportunities Fund Securities Litigation, United States District Court, District of Massachusetts, No. 1:08-CV-11064-NMG, Deposition Testimony (2012).

Virginia A. Papa vs. Putnam LLC, et al., Commonwealth of Massachusetts, Superior Court, Business Litigation Session, Civil Action No. 10-0797-BLS2, Deposition Testimony (2011), Testimony (2012).

Beesley, et al., vs. International Paper, et al., United States District Court, Southern District of Illinois, Case No. 3:06-cv-00703-DRH-SCW, Deposition Testimony (2011).

Securities and Exchange Commission vs. James Tambone and Robert Hussey, United States District Court, District of Massachusetts, No. 06-10885-NMG, Deposition Testimony (2012).

Securities and Exchange Commission vs. Mark Cuban, United States District Court, Northern District of Texas, Dallas Division, Civil Action No. 3:08-cv-02050, Deposition Testimony (2012), Testimony (2013).

In the Matter of John P. Flannery and James D. Hopkins, SEC Administrative Proceeding, File No. 3-14081, Testimony (2011).

Board of Trustees of the AFTRA Retirement Fund, et al., v. JPMorgan Chase Bank, N.A., United States District Court Southern District Of New York, Civil Action No. 09-00686, Deposition Testimony (2010).

Casey's General Stores, Inc. v. Alimentation Couche-Tard, et al., United States District Court, Southern District Of Iowa, Central Division, Civil Action No. 4:10-cv-265, Deposition Testimony (2010).

Heyman Investment Associates LLC v. Credit Suisse Securities (USA) LLC, et al., non-public arbitration, Arbitration Testimony (2010).

Chicago Board Options Exchange Incorporated, et al. v. International Securities Exchange, et al., Circuit Court Of Cook County, Illinois, County Department, Chancery Division, Case No. 06CH24798, Deposition Testimony (2010).

EXHIBIT 1

Example 1: CNS Flat

		New Trades		CNS [1]				
Day	Age [2]	Purchases	Sales	Previous Day Position [3]	Net Settling Trades	Share Deliveries/ Receipts	End of Day Position [3]	
Monday	T	90,000	-100,000	0	0	0	0	
Tuesday	T + 1	0	0	0	0	0	0	
Wednesday	T + 2	0	0	0	0	0	0	
Thursday	T + 3	0	0	0	-10,000	10,000	$\boxed{0}$	CNS Flat

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively.
Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] Age of original trade.

[3] CNS position shown from Clearing Member's perspective.

EXHIBIT 2

Example 2: Fail to Deliver

		New Trades		CNS [1]				
Day	Age [2]	Purchases	Sales	Previous Day Position [3]	Net Settling Trades	Share Deliveries/ Receipts	End of Day Position [3]	
Monday	T	90,000	-100,000	0	0	0	0	
Tuesday	T + 1	0	0	0	0	0	0	
Wednesday	T + 2	0	0	0	0	0	0	
Thursday	T + 3	0	0	0	-10,000	0	$\boxed{-10,000}$	FTD

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively. Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] Age of original trade.

[3] CNS position shown from Clearing Member's perspective.

EXHIBIT 3

Example 3: Fail to Deliver

		New Trades		CNS [1]				
Day	**Age [2]**	**Purchases**	**Sales**	**Previous Day Position [3]**	**Net Settling Trades**	**Share Deliveries/ Receipts**	**End of Day Position [3]**	
Monday	T	90,000	-100,000	2,000	0	0	2,000	
Tuesday	T + 1	0	0	2,000	0	0	2,000	
Wednesday	T + 2	0	0	2,000	0	0	2,000	
Thursday	T + 3	0	0	2,000	-10,000	0	$\boxed{-8,000}$	FTD

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively. Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] Age of original trade.

[3] CNS position shown from Clearing Member's perspective.

EXHIBIT 4

Example 4: CNS Flat

Day	Age [2]	New Trades: Purchases	New Trades: Sales	CNS [1]: Previous Day Position [3]	CNS [1]: Net Settling Trades	CNS [1]: Share Deliveries/ Receipts	CNS [1]: End of Day Position [3]	
Monday	T	90,000	-100,000	10,000	0	0	10,000	
Tuesday	T + 1	0	0	10,000	0	0	10,000	
Wednesday	T + 2	0	0	10,000	0	0	10,000	
Thursday	T + 3	0	0	10,000	-10,000	0	$\boxed{0}$	CNS Flat

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively. Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] Age of original trade.

[3] CNS position shown from Clearing Member's perspective.

EXHIBIT 5

Example 5: Fail to Deliver Resulting From Long Sales

Day	Age [2]	New Trades	CNS [1] Previous Day Position [3]	CNS [1] Net Settling Trades	CNS [1] Share Deliveries/ Receipts	CNS [1] End of Day Position [3]	Fail to Deliver [4]	Compliant with Rule 204
Monday	T	-1,000 [5]	0	0	0	0	No	–
Tuesday	T + 1	0	0	0	0	0	No	–
Wednesday	T + 2	0	0	0	0	0	No	–
Thursday	T + 3	0	0	-1,000	0	-1,000	Yes	Yes
Friday	T + 4	0	-1,000	0	0	-1,000	Yes	Yes
Monday	T + 5	0	-1,000	0	0	-1,000	Yes	Yes
Tuesday	T + 6	0	-1,000	0	1,000 [6]	0	No	Yes [6]

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively.
Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] Age of original trade.

[3] CNS position shown from Clearing Member's perspective.

[4] Fail to deliver after CNS end-of-day settlement cycle.

[5] Long sale trade.

[6] Assuming 1,000 shares borrowed no later than market open.

EXHIBIT 6

Example 6: Fail to Deliver with Ambiguous Age

Day	Long Sale Age	Short Sale Age	Executed Trades	Trade Type	CNS [1] Previous Day Position [2]	CNS [1] Net Settling Trades	CNS [1] Share Deliveries/ Receipts	CNS [1] End of Day Position [2]
Monday	T	–	-100	Long Sale	0	0	0	0
Tuesday	T+1	T	-100	Short Sale	0	0	0	0
Wednesday	T+2	T+1	150	Purchase	0	0	0	0
Thursday	T+3	T+2	0	–	0	-100	0	-100
Friday	T+4	T+3	0	–	-100	-100	0	-200
Monday	T+5	T+4	0	–	-200	150	0	-50

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively. Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] CNS position shown from Clearing Member's perspective.

EXHIBIT 7

Example 7: Persistent Fail to Deliver and Compliance with Rule 204

Day	Age [2]	New Trades	CNS [1] Previous Day Position [3]	Net Settling Trades	Share Deliveries/ Receipts	End of Day Position [3]	Fail to Deliver [4]	Compliant with Rule 204
Monday	T	-1,000 [5]	0	0	0	0	No	–
Tuesday	T + 1	0	0	0	0	0	No	–
Wednesday	T + 2	0	0	0	0	0	No	–
Thursday	T + 3	0	0	-1,000	0	-1,000	Yes	Yes
Friday	T + 4	0	-1,000	0	0	-1,000	Yes	Yes
Monday	T + 5	0	-1,000	0	0	-1,000	Yes	Yes
Tuesday	T + 6	1,000 [6]	-1,000	0	0	-1,000	Yes	Yes [6]
Wednesday	T + 7	0	-1,000	0	0	-1,000	Yes	Yes
Thursday	T + 8	0	-1,000	0	0	-1,000	Yes	Yes
Friday	T + 9	0	-1,000	1,000	0	0	No	Yes

Note:

[1] Positive numbers indicate a net right to receive, settling purchases, or shares delivered to the NSCC, respectively.
Negative numbers indicate a net obligation to deliver, settling sales, or shares received from the NSCC, respectively.

[2] Age of original trade.

[3] CNS position shown from Clearing Member's perspective.

[4] Fail to deliver after CNS end-of-day settlement cycle.

[5] Long sale trade.

[6] Buy-in purchase executed at market open.

EXHIBIT 8

Cumulative Corrections to Harris' Estimated Rule 204(a) Violations

10/1/08 – 10/31/11

	Harris Exhibit 1	Corrected by Dividing Lending and Borrowing Rates by 100 [1]	Corrected for Columbus Day and Veterans Day [2]
Method I			
Number of Security-Days with a Violation	1,631	1,631	1,562
Method A Gains	$5,635,623	$56,356	$54,257
Method B Gains	$5,841,347	$58,413	$55,942
Average of Methods A and B	$5,738,485	$57,385	$55,099
Method II			
Number of Security-Days with a Violation	1,642	1,642	1,572
Method A Gains	$5,666,227	$56,662	$54,449
Method B Gains	$5,887,572	$58,876	$56,381
Average of Methods A and B	$5,776,899	$57,769	$55,415
Method III			
Number of Security-Days with a Violation	1,766	1,766	1,690
Method A Gains	$6,340,400	$63,404	$61,216
Method B Gains	$6,766,185	$67,662	$65,247
Average of Methods A and B	$6,553,292	$65,533	$63,232
Average of Methods II and III			
Number of Security-Days with a Violation	1,704	1,704	1,631
Method A Gains	$6,003,313	$60,033	$57,833
Method B Gains	$6,326,878	$63,269	$60,814
Average of Methods A and B	$6,165,096	$61,651	$59,323

Source: Harris Report and Production; Penson SIAC 012 Reports; Penson Securities Lending Data; Penson Trade Blotter

Note:

[1] Harris' methodology is unchanged except for correcting lending and borrowing rates by dividing by 100 to put into percentage terms.

[2] Harris' methodology is unchanged except for correcting lending and borrowing rates and correcting for Columbus Day and Veterans Day, which are trading days that are not settlement days. Violations are affected if Columbus Day or Veterans Day falls on any day from T+1 to T+6 because Harris evaluates these positions for Rule 204(a) compliance one day too early. To correct Harris' estimated violations for this error, I follow Harris' methodology for evaluating Rule 204(a) compliance at market close on the second consecutive settlement day following the settlement date.

EXHIBIT 9

Distribution of Professor Harris' Estimated Gains

Purported "Gain" Less Than	Number of Alleged Rule 204(a) Violations			Percentage of Alleged Rule 204(a) Violations		
	Method I	Method II	Method III	Method I	Method II	Method III
$1	743	745	792	47.6%	47.4%	46.9%
$5	1,043	1,046	1,112	66.8%	66.5%	65.8%
$10	1,171	1,174	1,255	75.0%	74.7%	74.3%
$50	1,399	1,407	1,493	89.6%	89.5%	88.3%
$100	1,453	1,463	1,567	93.0%	93.1%	92.7%
Total	**1,562**	**1,572**	**1,690**			

Source: Harris Report and Production

Note: Calculations use the average of Professor Harris' Methods A and B and account for Columbus Day and Veterans Day.

EXHIBIT B

UNITED STATES OF AMERICA
Before the
SECURITIES AND EXCHANGE COMMISSION

ADMINISTRATIVE PROCEEDING
File No. 3-15873

In the Matter of

Thomas R. Delaney II and
Charles W. Yancey,

Respondents.

Expert Report of Professor Lawrence Harris

Contents

Expert Report of Professor Lawrence Harris

I. Introduction and Qualifications

(1) My name is Lawrence Harris. I hold the Fred V. Keenan Chair in Finance, and I am Professor of Finance and Business Economics at the University of Southern California Marshall School of Business. My curriculum vitae and a list of testimony given during the past four years are attached as Exhibits 2 and 3.

(2) I have been retained by the Division of Enforcement of the U.S. Securities and Exchange Commission to examine documents and data and form opinions concerning the above captioned matter. From my review of the SEC Order Instituting Proceedings[1] ("OIP") and from documents and other information provided to me, I understand that the Division claims that Penson Financial Services ("Penson") violated Rules 204T and 204 of Regulation SHO, 17 C.F.R. 242.204 ("Rule 204"), aided and abetted by Respondent Thomas R. Delaney II ("Delaney") and under the supervision of Respondent Charles W. Yancey ("Yancey"). In particular, the Division claims that Penson failed to close out certain fails to deliver in the Continuous Net Settlement System in a timely manner.

(3) My relevant professional background is as follows: Since I obtained my Ph.D. in Economics from the University of Chicago in 1982, my research, teaching, and consulting have addressed regulatory and practitioner issues in trading and in investment management. I have written extensively about trading rules, transaction costs, index markets, and market regulation. My book, *Trading and Exchanges: Market*

[1] The Order Instituting Proceedings can be found at http://www.sec.gov/litigation/admin/2014/34-72185.pdf.

Microstructure for Practitioners (Oxford University Press: 2003) provides an extensive introduction to the economics of trading. Of particular relevance to this matter, this text includes a full chapter devoted to understanding brokers and their operations, and it also provides extensive discussions about clearing and settlement and about regulation.

(4) I served as Chief Economist of the U.S. Securities and Exchange Commission from July 2002 through June 2004, where I directed the SEC Office of Economic Analysis in which 35 economists, analysts, and support staff engaged in regulatory analysis, litigation support, and basic economic research. Of particular relevance to this case, during my service at the SEC, I participated in numerous discussions about Regulation SHO and how to reduce security settlement failures.

(5) I currently serve as a director (and chairman) of the Clipper Fund, Inc. (CFIMX); as lead independent director of Interactive Brokers Group, Inc. (IBKR); and as the research coordinator of the Institute for Quantitative Research in Finance (the Q-Group).

(6) In the past, I have served as an associate editor of the *Journal of Finance*, the *Review of Financial Studies*, and the *Journal of Financial and Quantitative Analysis*. I have also served as a director of CFALA—the Los Angeles Society of Chartered Financial Analysts, and as the director of the USC Marshall School of Business Center for Investment Studies.

(7) I have been designated by the CFA Institute as a CFA charterholder (Chartered Financial Analyst), and I have written chapters for the curricula that the Institute distributes to CFA candidates and to candidates in its Claritas® Investment Certificate program, which allows investment industry workers to obtain a certificate indicating a general level of knowledge of investment management processes.

(8) I am being compensated at $775 per hour for preparation and testimony. I also receive some compensation from Charles River Associates for work that they conduct under my supervision. My compensation does not depend on the outcome of this legal proceeding or the substance of my testimony.

II. SCOPE OF TESTIMONY

(9) The SEC Division of Enforcement claims that Penson violated Rules 204T and 204 of Regulation SHO by failing to close out certain fails to deliver in the Continuous Net Settlement System.

(10) The Division has asked me to provide expert testimony that:

a. Explains how stocks are sold in the United States, how the clearing and settlement system works, what Rule 204 requires, and why the rule applies to the Penson stock loan department.

b. Provides a characterization of the extent of Penson's Rule 204 violations.

c. Estimates the benefit that Penson obtained from failing to close out certain fails to deliver in a timely manner.

(11) In addition to my knowledge of securities markets, I have consulted many documents in the preparation of this testimony. A list of materials that I have relied upon appears in Exhibit 4. I personally prepared this testimony. The data analyses were conducted by staff at Charles River Associates (CRA) under my supervision.

(12) This report reflects my current opinions in this matter; however, I reserve the right to supplement or revise my opinions if new information becomes available. I may also offer rebuttal testimony, if requested by counsel.

III. Executive Summary

(13) Penson was a broker-dealer that settled trades for its clients, many of whom included other broker dealers. It settled trades in its capacity as a clearing member of the National Securities Clearing Corporation ("NSCC").

(14) Penson often lent securities that it controlled to other broker-dealers. These lent securities were securities that Penson held on behalf of its clients, or its clients' clients. When those security-holders sold their shares in a transaction called a long sale, Penson may not have had enough shares on hand to settle the trades when required by NSCC. Penson could have settled the trades by borrowing stock, by purchasing stock, or by recalling the stock loans in a timely manner. Instead, Penson left the loans outstanding, resulting in continued lending revenues, and it did not otherwise settle many of these trades in a timely manner.

(15) Rule 204 specifies close-out procedures that clearing participants such as Penson must follow when they fail to settle trades. With respect to long sales that failed to settle because Penson did not deliver shares, Rule 204(a)(1) required Penson to either borrow securities or purchase them by no later than the beginning of regular trading hours on the third consecutive settlement day following the settlement date, which normally would be six trading days after the sale.

(16) For expository brevity, "The Long Sale Close-out Requirements" will refer to the Rule 204(a)(1) close-out requirements, "Long Sale Close-out Deadline" will refer to the beginning of regular trading hours on the third consecutive settlement day following the settlement date, and "T+6" will refer to the sixth trading day after a trade occurs. Note that all settlement days are trading days and vice versa.

(17) The Securities and Exchange Commission adopted Rule 204 (and its nearly identical predecessor Rule 204T) to reduce the number and size of settlement failures that were occurring. The Commission was concerned about how these failures decrease confidence in the capital markets.

(18) Settlement delivery failures are problematic for several reasons. The buyer of a stock does not obtain the right to receive dividends, vote the stock, or lend the stock until the trade settles. Had buyers in failed transactions been aware that they would not settle on time, they might not have entered the transactions or they might have done so on different terms.

(19) The lending issue is of particular relevance in this case because the long sales that the Division alleges Penson failed to settle on time when it had stock loans outstanding involved stocks for which lending rates often were unusually high. Penson thus was earning substantial loan revenues on positions that others could have loaned out had their purchases settled on time.

(20) Compliance with Rule 204 is not necessarily difficult or costly. On the day a sale is arranged, Penson would know that it would have to settle three days later. If the shares then were loaned out, it could have recalled them on or before T+2 with a reasonable expectation that they would have been returned within three days, which would be before the T+6 Close-out Deadline. If the shares were not returned, Penson could have purchased them at the borrower's expense on T+6 before the Close-out Deadline. Penson also could have recalled the loans on days T+3, T+4, and T+5. Although shares recalled on these dates might not return until after the Close-out Deadline, many would, especially those recalled on T+3 or T+4. In any event, if the shares were not returned,

Penson may have been able to borrow them on T+6 before the Close-out Deadline to satisfy the Long Sale Close-out Requirements. Although Penson would have incurred costs from borrowing the shares, the revenues it was earning on the lent shares would have at least partially offset these costs. Finally, Penson simply could have bought the shares on or before the market open on T+6 to satisfy the Long Sale Close-out Requirements.

(21) The Division alleges that Penson failed to close out long sale delivery fails by the Closeout Deadline when it had lent shares in the same securities. I examined Penson's trade blotter, stock loan records, and NSCC settlement records and using various methods, identified 1,631 to 1,766 (depending on method used) security-days on which Penson did not close out before the Close-out Deadline delivery failures resulting from long sales of securities for which it had lent shares. These events occurred on 633 to 648 of the 778 trading days that I examined, about 82% of all days.

(22) I identified these failures only for trades that Penson processed through its SunGard Phase 3 trading platform as only data from this platform were made available to me. Omitted from these estimates are trades that Penson processed through its Broadridge BPS platform.

The Benefit to Penson

(23) By failing to borrow or purchase by the Close-out Deadline, Penson avoided paying fees to borrow, and Penson avoided paying for stock that it did not want. At the same time, Penson continued to receive the lending fees on the stock that it had lent.

(24) I calculated the approximate one-day benefit that Penson obtained from failing to recall its loans to settle long sales that had not yet settled by the T+6 Close-out Deadline. This

measure is an estimate of the benefit that Penson obtained by failing to settle long sales (for which it had lent out the securities) before the Long Sale Close-Out Requirements of Rule 204 became effective.

(25) I also calculated the approximate one-day benefit that Penson obtained from failing borrow stock at or before the Close-out Deadline to close out these long sales, up to the size of the stock loans. This measure is an estimate of the benefit that Penson obtained by failing to meet the Long Sale Close-out Requirements when it had lent out the securities.

(26) During the relevant period (October 1, 2008 to October 31, 2011), the average of these two estimates (which are close) totals $6,165,096. As noted above, I obtained these estimates only for trades that Penson processed through its SunGard Phase 3 trading platform and not also for trades that Penson processed through its Broadridge BPS platform.

(27) Although many of these fails ultimately settled on T+6 but after the Close-out Deadline, some did not. I did not calculate the additional benefits associated with long sales (with associated stock loans) that settled after T+6.

(28) More than half of the failures occurred in stocks for which the stock loan rebate rates were abnormally large (greater than 3% in absolute value). The mean rebate rate for loans associated with failed deliveries was 10.8%. These results indicate that Pension did not close out its delivery failures when those failures would provide it the greatest economic benefit.

(29) These estimates provide a lower bound on the gains that Penson obtained from failing to settle or close out long sale delivery failures by the Close-out Deadline. It assumes that

Penson would have been able borrow shares by the Close-out Deadline, or that it would have been able to receive shares recalled from its stock loans by the Close-out Deadline had it recalled its stock loans earlier. If Penson could not borrow the required shares on T+6 by the Close-out Deadline, Rule 204 would have required that Penson buy these shares then. Such purchases would have incurred transaction costs including market impact costs, tied up company capital, and exposed the company to unwanted risk. I did not compute the probability that Penson would incur these costs, or their expected costs. The avoidance of these costs are benefits associated with failing to comply with the Long Sale Close-out Requirements, but they do not appear in my calculation of the benefits Penson obtained from its failures.

(30) Note also that following violations of Rule 204(a), Rule 204(b) prohibited Penson from accepting additional short sale orders or effecting any short sales in the security without first borrowing the securities. This restriction would have been in effect until Penson had closed out the fail-to-deliver positions by purchasing securities and waiting until those purchases had cleared and settled. I did not check to see whether Penson violated this prohibition of Rule 204. Had Penson continued to accept additional short sale orders or effect short sales without preborrowing the securities, it would have derived economic benefit from these actions. I did not attempt to measure such benefits.

IV. DEFINITIONS AND INSTITUTIONAL BACKGROUND

(31) This section introduces the institutional information necessary to understand the settlement and clearing issues involved in this case.

Trade Settlement

(32) Trades occur when exchanges, brokers, or various alternative trading systems match buyers to sellers. Trades also occur when dealers fill their clients' orders.

(33) In the United States, the vast majority of stock transactions settle on the third market day (days when the markets are open for trading) following the trade. This day is called *T+3*, and trades that are expected to settle on this day have *normal way settlement* terms.

(34) NSCC, a division of the Depository Trust Company, arranges settlement for the vast majority of equity transactions. The NSCC is similar to an escrow operation in real estate. It arranges for the transfer of stock in exchange for money to settle trades in a process called *Delivery versus Payment.*

(35) The NSCC runs a settlement system called the Continuous Net Settlement System ("CNS") to settle trades in eligible securities among its participating broker-dealers. These broker-dealers are called *clearing participants*. Penson was a clearing participant.[2]

(36) Broker-dealers who are not clearing participants have *correspondent relations* with a broker-dealer who is a clearing participant. The clearing participant settles trades for its correspondent clients. The clearing participant is said to *carry the accounts* of its correspondent clients and those of its clients' clients. Penson had many such correspondent clients.

(37) All the trading at issue in this case occurred in CNS-eligible securities. On a daily basis, for each clearing participant, CNS nets the participants' delivery and receive

[2] Rule 204 uses the terms "registered clearing agency" to refer to clearing entities such as NSCC and "participant of a registered clearing agency" to refer to clearing participants such Penson.

obligations, which include those of any of its correspondent clients. CNS then tries to settle the net differences.

(38) A trade will fail to settle on T+3 if the clearing participant representing the seller does not deliver stock in time for settlement. In which case, the settlement is said to *fail*. The clearing participant who fails to deliver stock has a *delivery failure* while the participant who was supposed to receive the stock has a *receive failure*. *Settlement failures* are carried over until the next day when NSCC again tries to arrange settlement.

(39) Settling trades in CNS is an obligation of the clearing participants. Whether delivery failures arise because a client failed to deliver a security to the participant or because of any action the participant may or may not have taken, obligations to settle remain with the participant.

Long and Short Sales

(40) Sales are classified by whether the seller owns the stock sold. A *long sale* is the sale of a stock that the seller owns. A *short sale* is the sale of a stock that the seller does not own.

(41) Settlement of both long and short sales requires the delivery of the sold securities by the clearing participant who represents the seller. When the seller owns the securities, those securities generally are transferred to NSCC to settle the trade. When the seller does not own the securities, the seller (or more typically the broker-dealer representing the seller) arranges to borrow the securities from a long-holder. The borrowed securities then are transferred to NSCC to settle the trade. While borrowing can be done by correspondent broker-dealers, I understand that Penson borrowed securities on behalf of its correspondent clients.

Stock Loans

(42) Many shareholders who own or control stock are willing to lend their shares to short sellers. When short sales settle, the short sellers collect the proceeds of their sales, but they owe stock to their lenders.

(43) Stock loans are almost always arranged subject to the Master Securities Loan Agreement ("MSLA"). The MSLA is a standardized contract that identifies the rights and obligations of the borrower and the lender. Generally, the borrower must provide collateral (usually 102% of the value of the loaned stock) to the lender to secure the loan; the borrower or the seller can terminate the contract whenever they want; and the borrower can purchase shares with the collateral if the lender does not return them within three days when requested.

(44) Lending stock to short sellers (and occasionally to others) can be quite profitable since lenders are paid fees by borrowers for the use of their shares. These fees are called *stock loan fees*. When stocks are hard to borrow, borrowers offer high stock loan fees to encourage lenders to lend their shares, and the lending fee can rise substantially. Practitioners say that such stocks are *on special* because special rates apply to these loans—not the typical low rates that apply to most easy-to-borrow stocks. Lending stock also is profitable because the lenders can earn interest on the collateral that they hold.

(45) The *stock loan rebate rate* is the actual fee rate that lenders and borrowers agree to when they execute a lending contract. It is the difference between the stock loan fee and a short-term interest rate such as the federal funds rate. Stock loan fees generally are not quoted; they usually are implied from the stock loan rebate rate and the current short-

term interest rate. When interest rates are high, the rebate rate is a positive number for easy-to-borrow stocks for which the stock loan fee is small. It is the rate that lenders must rebate to the borrowers from the privilege of earning interest on the collateral. For stocks on special, also known as *hard-to-borrow* stocks, the rebate rate is negative. Most of the stocks that Penson failed to settle on time were hard-to-borrow stocks for which the rebate rate was negative and large.

(46) Stock loan contracts specify how the collateral and total rebate amounts are computed. For contracts arranged among broker-dealers in the United States, both the collateral amount and the rebate rate generally are based on a price called the *contract price*, which is specified when the contract is struck. The contract price is computed by rounding 102% of the current stock price upward to the nearest whole dollar. The collateral required is equal to the contract price times the shares borrowed. The total rebate that accrues from one trading day to the next trading day is equal to the rebate rate divided by 360 times the number of calendar days between the two trading days times the required collateral.

(47) Broker-dealers such as Penson commonly arrange stock loans for their clients who want to sell stock short. At Penson, this function was handled by the Stock Loan Department. (At many broker-dealers, the *Short Sale Department* arranges to borrow stock to settle short sales. The name that Penson assigned to the department that arranges these transactions is not relevant to this case.)

(48) Broker-dealers also loan stock to other broker-dealers and their clients. The department in a brokerage firm that arranges to loan stock generally is called the *Stock Loan*

Department. Penson assigned these functions to its Stock Loan Department. The complaints of the Division in this case involve stock loans that Penson arranged.

(49) Brokers can loan out stock shares that their customers have purchased on margin. Although customers (and the IRS) believe that shares carried in a margin account are owned by the customer, in certain respects, they are controlled by the broker. When customers execute margin account agreements with the brokers, they give their brokers the right to lend those shares, subject to certain regulatory limits that depend on capital adequacy standards and the need to segregate certain securities and funds to protect clients from losses should a broker-dealer fail. The stock loan fees that brokers earn lending client shares are often a significant source of their business revenues. The Penson Stock Loan Department generated average monthly revenues of $1.94 million, or approximately $23.3 million per year, during the period October 2008 to April 2012.[3] These revenues also include revenues that the Stock Loan Department made by borrowing stock to lend at a markup to Penson clients who were selling stock short.

(50) Stock loans typically end when short sellers close their positions by repurchasing shares. When their purchases settle, their brokers transfer the shares to the stock lenders from whom they borrowed the shares and thereby terminate the stock loans.

(51) Stock loans also often end when long sellers sell stock that their brokers have lent out. The brokers then *recall* (call back) the loaned shares so that they can settle these long sales. The borrowers must either borrow shares from another lender or purchase shares to close the loan. The Division claims that Penson failed to obtain shares in a timely manner to settle long sales that its clients made of securities that Penson had loaned out.

[3] Computed from spreadsheet, "SEC Results III.XLSX," tab "Stock Loan Revenue" that Penson provided to the SEC on August 9, 2012..

(52) When a stock loan is recalled, the typical stock loan agreements used in the United States specify that the borrower has three days to return the stock, after which, if the borrower has not returned the stock, the lender has the option to buy the stock in the open market and charge the borrower. Borrowers generally respond to a recall notice by borrowing shares from another lender, at which time they return the shares to the original lender. They generally respond quickly because they want to ensure that they can keep open their short position or that of their client. Thus many recalls are fulfilled on the day of the recall or on the next day. However, when stocks are difficult to borrow, recalls are not fulfilled immediately. Accordingly, for such stocks, broker-dealers who anticipate needing the shares, for example, to settle a long sale, should recall as early as they can.

Long Sale Delivery Failures of Loaned Securities

(53) To settle a long sale of a stock that the broker has loaned out, the broker must obtain shares in one of five ways: 1) If the client also purchased shares that day, the purchase will offset the sale and only the net quality will have to be settled. 2) Most commonly, the broker will obtain the shares from the borrower by recalling the stock loan. 3) Alternatively, the broker may borrow the shares from someone else. 4) Occasionally, another of the broker's clients will have bought the same security on the same day so that, subject to certain regulatory constraints, the delivered shares can offset the delivery obligation. 5) Least frequently, the broker may buy the shares in the open market.

(54) Since the cost of borrowing shares from someone else generally is greater than the revenue that brokers make from lending shares, brokers often call in their stock loans when their clients want to sell shares that the brokers have lent. I understand that

Penson generally did not borrow stock to settle long trades, and that Penson rarely, if ever, bought shares in the open market to close out long sales by the Close-out Deadline.

(55) If none of these events take place in adequate aggregate size by day T+3 after the sale on day T+0, the trade will fail to settle. For example, suppose that Penson has lent out all 10,000 shares that one of its clients holds in the client's margin account, and no other client holds shares in this security that Penson can lend out. On day T+0, that client sells all 10,000 shares and another client buys 2,000 shares that Penson can use to settle the sale (because various regulatory segregation and capital adequacy constraints are not binding for the buying client's account). On day T+3, Penson recalls the stock loan, but only receives 1,000 shares back that day. At the end of that day, Penson will have a net settlement delivery obligation of 8,000 shares (assuming that it had no beginning-of-day failure to deliver), it will deliver 1,000 shares received from the stock loan, and it will fail to deliver 7,000 shares. This delivery failure will be due to the long sale of a loaned stock.

Short Sale Delivery Failures

(56) Although this case is not about short sale delivery failures, the procedures used to address these failures must be considered to understand Penson's long sale delivery failures that the Division alleges violate Rule 204.

(57) A net short sale will fail to settle if the clearing participant does not deliver sufficient shares on T+3. The participant may obtain the shares by borrowing them from lenders, by using shares held by other clients (if certain regulatory constraints are not binding), or from the settlement of purchases made by other clients on T+0 (to the extent that regulatory constraints are not binding).

(58) When short sales are arranged with no intention of borrowing shares, they are called *naked short sales.* One purpose of Rule 204 of Regulation SHO is to eliminate naked short selling.

(59) If by day T+3, shares are not available to settle a short sale occurring on T+0, Rule 204 requires that the broker-dealer close out the failure by borrowing the shares or by *buying-in* the position by the beginning of trading on day T+4.

(60) I understand that Penson regularly waited until day T+3 to borrow stock to settle short sales. If Penson was unable to do so (or unwilling to do so if they felt that borrowing the stock would be too costly), Penson would try to borrow the stock before market open on T+4. If by the market open on T+4, Penson still had not borrowed all shares necessary to settle the short sale, Penson would close out the short sale delivery failure by buying-in the remaining shares.

V. RULE 204 OF REGULATION SHO

(61) This section discusses the public policy issues associated with settlement failures, how Rule 204 addresses these issues, and the costs of complying with the Rule.

Public Policy Issues Associated with Settlement Failures

(62) The failure to settle trades is a serious problem for buyers. Buyers who do not receive the shares that they bought on a timely basis lose many of the benefits of ownership. They cannot vote the stock, they cannot receive dividend payments from the companies,[4] and often—most importantly—they (or their brokers) cannot lend their

[4] A buyer whose purchases trades have failed to settle will generally receive from the seller "payments in lieu of dividends" when dividends would otherwise be due. These payments are always treated as ordinary income by the IRS whereas dividends from positions held more than 60 days are qualified for preferential tax treatment.

stocks out. The lending issue is more important than it may seem because settlement failures most often occur in hard-to-borrow stocks for which lending fees are high.

(63) The requirement that short sales be settled by borrowing shares also helps prevent market manipulators from running down stock prices by naked short selling in an attempt to panic the market. Settlement failures thus are a serious public policy problem.

(64) More generally, confidence among investors in our capital markets depends on trades settling when they are supposed to settle. When trades do not settle due to delivery failures, buyers do not own the stocks that they believe they have purchased. Instead, they own the rights to receive those stocks that are essentially guaranteed by brokers with whom they have no credit relations and from whom they receive no compensation for bearing credit risk. In effect, the seller unilaterally converts a securities trade contract into an undated futures contract, to which the buyer might not have agreed and that might have been priced differently. This situation is unattractive to buyers, and if allowed to grow, it would create substantial systemic risks in the economy.

(65) These issues are all identified in the Adopting Release for Rule 204 on pages 5-8.[5] They are well recognized by all well informed practitioners.

Rule 204 of Regulation SHO

(66) Concerns about settlement failures led the SEC to adopt temporary Rule 204T and later Rule 204 (§242.204) of Regulation SHO, the *Close-out Rule.* The differences between

[5] See SEC Release 34-603888, "Amendments to Regulation SHO" at http://www.sec.gov/rules/final/2009/34-60388.pdf.

the two versions of the rule are minor and not relevant for this case.[6] Section (a) of this rule requires that participants (such as Penson) of a registered clearing agency (such as NSCC) must deliver securities to settle their long and short sales on the settlement date (generally T+3). If they fail to deliver on that date, no later than the beginning of regular trading hours on the next settlement day (T+4), they must immediately *close out* their fail-to-deliver positions by borrowing or purchasing securities of like kind and quantity.

(67) Rule 204(a) has several exceptions. The exception relevant to this case appears in paragraph (a)(1). If a clearing participant can demonstrate based on its books and records that a delivery failure occurred due to a long sale, the close-out date is extended two days to the beginning of regular trading hours on day T+6, the Closeout Deadline. In particular, no later than the Close-out Deadline, the participant must immediately close out the fail-to-deliver position by purchasing or borrowing securities of like kind and quantity. The Division alleges that Penson often failed to arrange a timely close-out of fail-to-deliver positions arising from long sales of stocks that Penson had lent out when required by Rule 204.

(68) If paragraph (a) of Rule 204 is violated, paragraph (b) imposes further restrictions on clearing participants. Whereas Regulation SHO generally allows participants to arrange short sales before the securities needed to settle the sales are borrowed (subject to some conditions), when the participant has a fail-to-deliver position that violates paragraph

[6] The primary difference between Rule 204T and Rule 204 of any relevance to this case is in the acceptable close out procedures for fails to deliver for long sales. Rule 204T required a clearing participant with an open fail at the beginning of regular trading hours on T+6 to buy the securities at that time to close out the delivery failure. Rule 204 also allows the clearing participant to borrow the securities at that time as an alternative to buying the securities. According, Rule 204 is less restrictive than its temporary predecessor. Note that if the position is not closed out at that time, both rules require that the close-out be done with a purchase.

(a), the participant must borrow securities before accepting additional short sale orders or effecting a short sale in the security. This requirement stays in effect until the participant closes out the fail-to-deliver position by purchasing securities of like kind and quantity and that purchase has cleared and settled at a registered clearing agency. Note that once the requirements Rule 204 (b) are engaged, closing the settlement failure requires that the participant purchase the securities. The option to close the fail by borrowing is no longer available. Moreover, the participant must wait until the purchase settles—typically three days—before it can resume accepting short sale orders and effecting short sales without first borrowing shares. Although participants that violate 204(a) likely also violate 204(b) if they continue to arrange short sales after violating 204(a), the Division did not identify infractions of this paragraph of Rule 204 in its complaint, and I did not tabulate these infractions.

(69) Rule 204 grew out of the failure of the market to adequately control the settlement failure problem. In the absence of serious sanctions, settlement failures had become too common, and they were not being resolved quickly. The SEC noted its concerns about large and persistent fails to deliver and those of various commentators throughout the Adopting Release for Rule 204 (and 204T), and most notably on pages 9-11. The SEC acted to reduce these failures and to ensure that further short selling which could exacerbate settlement failure problems would not occur until all trades in the security settle.

(70) The additional two-day period given to close out fails to deliver arising from long sales was added to Rule 204 because long sales sometimes fail to settle for legitimate reasons. The Adopting Release at page 20 provides some examples: "For example, human or

mechanical errors or processing delays can result from transferring securities in custodial or other form rather than book-entry form, thereby causing a fail to deliver on a long sale."

Compliance Costs

(71) The Adopting Release at pages 17 and 18 specifically discusses the question of whether the close-out for long sales should occur at the market open or close on T+6. The release indicates that while the Commission recognizes the potential market impact of the close-out requirements, particularly at the market open, it believes that these potential effects are justified by the benefits of retaining the strict close-out requirements of temporary Rule 204T (for which the timing was the same), and which had helped reduce delivery failures.

(72) The Commission could have chosen any date or time to require close-outs under this rule. Had it chosen an earlier date or time, the Rule would have been more disruptive and might have hurt dealers who provide liquidity to other traders. Had it chosen a later date or time, settlement delivery failures often would continue for longer periods. The Commission's decision to require close-outs for long-sale delivery failures at the market open on the third day settlement after the first failure (T+6) represents a reasonable compromise among conflicting interests that was supported by the Commission's analysis of the impact of Rule 204T. The Adopting Release discusses these issues on pages 17-18.

(73) The Commission specifically considered the question of whether to place the Close-out Deadline so that shares obtained from a prompt buy-in of a promptly recalled stock loan would be available to settle a failed long sale. In particular, commentators cited in

footnote 60 of the Adopting Release noted that if a stock loan were recalled on the day of a long sale (T+0), the borrower failed to deliver the shares as required by T+3, and the lender initiated a buy-in to obtain the shares on T+4, the shares would not be received on T+6 so that the shares would not be available to meet a Close-out Deadline on T+6. Regardless, the Commission set the Close-out Deadline on T+6 to ensure timely close-outs, with the expectation that even if this sequence of events occurred, the participant could still borrow or buy-in to close out by the Close-out Deadline.

(74) The Commission undoubtedly also knew that most recalls result in the delivery of securities on time, so that a buy-in would not be necessary. By setting the long sale Close-out Deadline on the morning of T+6 instead of in the evening on T+6, the Commission provided incentive for participants to recall loans on T+2 or earlier, instead of waiting until the sale failed to settle on T+3. Since recalled shares often arrive on the day of the recall or on the next day, recalls made on T+2 often allow settlements to complete on T+3 as scheduled.

(75) When a settlement failure occurs following a long sale due to a stock loan, the close-out obligations of Rule 204 (and its nearly similar predecessor Rule 204T) are not onerous. On the day of the sale of a loaned security, T+0, a broker-dealer would know whether it has sufficient shares in other margin accounts to settle the trade. If not, it could call back the loan on that date or the next, arrange to borrow shares to settle the trade, or purchase the shares.

(76) Since borrowers generally deliver shares on a recalled loan quickly (and by contract, within three days), if the broker called back the loan on T+0, no settlement failure would occur. If the shares were called back on T+1, T+2, or even T+3, the shares often

would come back in time for settlement on T+3 and no settlement failure would occur. As long as the shares are recalled by T+2, they normally would be expected to arrive by T+5. Although a settlement failure would occur, it would be resolved before the T+6 Close-out Deadline and thus avoid the T+6 Long Sale Close-out Requirements.

(77) I understand that Penson only learned about trades arranged by its correspondent brokers after the close of trading on T+0. With this information, it still would have been able to recall loans on T+1 or T+2 to avoid the T+6 Long Sale Close-out Requirements.

(78) If the clearing participant does not call back the loan, or if the shares do not return as expected following a timely recall, the participant still can borrow the shares by the T+6 Close-out Deadline to remain in compliance with the Rule. Although the participant sometimes may have to pay a high lending fee, the lending fee revenue that the broker is earning from the still outstanding stock loan would at least partially offset this cost, so even this remedy would not be onerous.

(79) Finally note that paragraph (e) of Rule 204 provides credit for early close-outs. In particular, a clearing participant who buys or borrows as late as on settlement day will be given credit (subject to some additional conditions designed to close loopholes) for closing out a settlement failure that will occur. Thus on the settlement day when participants receive early morning reports detailing their settlement obligations, they still can avoid the costs of forced close-outs.

(80) The close-out obligations of Rule 204 only will prove to be onerous if the participant does not receive recalled shares by the T+6 Close-out Deadline, has failed to exercise its option to obtain early credit via 204(e), and does not or cannot borrow the shares at the open on T+6. In which case, the participant must buy shares in the market to obtain the

shares needed to settle the long sale, which now presumably will finally settle on day T+9. This purchase could prove to be expensive because it must be done quickly at the market open when it might have substantial price impact if the order is large. But guidance in the Adopting Release also addresses this issue: Footnote 66 on pages 18-19 explicitly indicates that a participant can close out using a volume-weighted average price order "VWAP" order that is executed over the course of the day as long as it is irrevocably entered no later than the Close-out Deadline. Since VWAP orders generally have less impact than market-on-open orders, the price impact of the purchase generally would be expected to be lower.

(81) Brokers can avoid these buy-in costs, either by recalling loaned shares by T+2, or by borrowing shares by T+3 and getting the Rule 204(e) pre-fail credit (subject to satisfying some other constraints), or by borrowing before the T+6 Deadline. The first strategy generally allows them to avoid the T+6 close-out requirement, unless the borrowers do not return the shares when requested, in which case the broker can still try to borrow before the Deadline or the broker can buy-in the borrower. These responses are exactly what the Commission sought when adopting Rule 204 in its effort to reduce the number and length of settlement failures.

VI. Identifying and Valuing Penson's Infractions

(82) The two main reasons why Penson failed to deliver security shares when required are that it failed to borrow securities to settle short sales, and that it failed to deliver securities to settle long sales when it had lent out those securities. The Division has asked me to identify the latter events, and to characterize the extent of their occurrence and the monetary benefits that Penson obtained from failing to close out when required

by Rule 204. This section describes the methods that I used to calculate these values. Formulas corresponding to these methods appear in Appendix A.

(83) I understand that Penson used an electronic database system called Sendero to track Penson's CNS aged settlement commitments and failures to deliver on a real-time basis. Penson's staff used this system to easily identify impending and existing settlement failures so that they could make the borrowing, lending, and loan recall decisions necessary to settle Penson trades and maximize stock loan revenues.

(84) Without access to this system, I had to reconstruct Penson's settlement processes based on Penson's daily trade blotter, its daily SIAC 12 CNS reports, and its daily stock loan records.

(85) This section starts with a discussion of the data sources used. I then describe how I identified long sales that failed to deliver by the T+6 Close-out Deadline, and their relation to outstanding stock loans and to long sales arranged six days before.

DATA SOURCES

(86) The calculations depend on three primary data sources: The Penson Trade Blotter, the daily SIAC 12 report of Penson's CNS settlement activity, and a Penson dataset containing information about Penson's daily outstanding stock loan contracts—both borrowed and lent. The SEC sent me these data which I understand were obtained from Apex (the successor to Penson). The data span the period from September 2, 2008 to December 27, 2011. The tabulations of the results provided in this report only cover the period relevant to this case, October 1, 2008 to October 31, 2011.

(87) Penson conducted its trades on two platforms during the relevant period.[7] Each platform had a separate NSCC account, and Penson's settlement obligations applied separately to each account. Accordingly, Penson was required to separately meet the requirements of Rule 204 in each account.

(88) Most trading took place in the SunGard Phase 3 platform which is identified by account number 234. I understand that this platform was Penson's exclusive platform until June 2010 at which time Penson acquired Ridge Clearing and became responsible for all trading conducted through Ridge's Broadridge BPS platform (account number 158).

(89) Complete data necessary for the analyses required in this study were made available to me only for the SunGard Phase 3 platform (account number 234). Accordingly, the reported results underestimate the extent of the relevant delivery failures since it does not count any such failures that may have occurred in the Broadridge BPS platform (account number 158).

Penson Trade Blotter

(90) The Penson trade blotter provides a record of every trade Penson arranged. These records include information about the account, the security traded, and the terms of the trade.

(91) **"AccountType"** is a field is of particular relevance to this analysis. It indicates the type of subaccount for which the trade was arranged. The three types of subaccounts relevant to this analysis are the inventory (AccountType=0), cash (=1), margin (=2), and short (=3) subaccounts. Trades in the short subaccounts include short sales and

[7] Two other Penson NSCC accounts, 5063 (Canada) and 7380 (a stock loan borrowing/lending pass-through account) are not of interest to this case.

purchases to cover short sales. I understand that trades in the inventory accounts include market-maker transactions as well as other types of transaction. I also understand that Penson loaned shares from its clients' inventory accounts and from its clients' margin accounts.

(92) The stock loans that are of interest in this case were loans of securities held in the inventory accounts and the margin accounts, since broker-dealers are only allowed to loan out these securities, and then only subject to certain regulatory constraints. Client sales of these positions could lead to delivery failures if Penson did not have sufficient shares on hand in other accounts to deliver to settle without recalling loans. Sales of shares in cash accounts generally would not lead to delivery failures because the cash account positions are segregated, which means that they cannot be lent out. Accordingly, shares generally should have been available on T+3 to settle cash sales.

The SIAC 12 CNS Settlement Activity Report

(93) For each Penson clearing account in the NSCC CNS clearing system, the SIAC 12 Report provides daily records that indicate opening position, net daily transactions, and closing position for each security for which Penson had a security delivery obligation or receipt shortfall, settling trades, and share deliveries or receipts.[8]

(94) **"Opening Position"** reflects Penson's net delivery obligation at the beginning of the day. It is always exactly equal to the previous day's closing position. A negative value indicates a failure to deliver carried over from the previous day. The CNS opening

[8] SIAC is the acronym of the Securities Industry Automation Corporation, a contractor that provides various data processing services to NSCC.

position represents Penson's net settlement position before any transactions are processed for that day.

(95) Shares can be processed before the beginning of regular trading hours. Accordingly, the CNS opening position does not necessarily reflect Penson's net settlement position at the beginning of regular trading hours. In particular, shares that Penson may borrow and receive before the start of trading will affect its settlement position. Such transactions are not reflected in the SIAC 12 Report opening position, but they appear in the receipts reported for that day. I understand that Penson did not borrow before the market open on T+6 to close out delivery failures due to long sales.

(96) **"Settling Trades"** reflects the net trades scheduled to settle on that day, which for normal-way settlement is three trading days (T+3) after the trades were arranged. (Other settlement instructions such as same-day settlement are very rare.) Positive values reflect purchases for which shares should be delivered through the CNS system to Penson.

(97) As noted above, the CNS system nets delivery and settlement obligations whenever possible. Accordingly, when on the same day, a participant arranges purchases totaling 1,000 shares and sales totaling 1,500 shares in the same security, the net settling quantity in that security is -500 shares, where the minus sign indicates that shares must be delivered. The CNS system does not identify whether these trades are composed of long or short sales, or of long purchases or purchases to cover short positions. It also does not identify whether trades were arranged for inventory, cash, margin, or short accounts. This information must be inferred from the trade blotter.

(98) **"StockDiv/Misc. Activ"** primarily reflects net shares delivered due to stock dividends and other unusual events. Non-zero values in this field are rare.

(99) **"Receipts/Deliveries"** reflects net shares delivered by Penson or received by Penson. Positive values reflect net deliveries of shares by Penson to the CNS settlement system.

(100) **"Closing Position"** reflects Penson's net delivery obligation at the end of the day. It is always exactly equal to the next day opening position. A negative value indicates one or more delivery failures.

Penson Stock Loan Data

(101) The Penson stock loan data provide a daily record of all open stock loan contracts as of the end of the day. The records identify the date, side (borrowing or lending), counterparty, security, size in shares and in dollars, trading platform, and rebate rate for each open contract.[9] I understand that this data set was prepared by Penson staff as the loans were arranged.

METHODS USED TO IDENTIFY RULE 204 VIOLATIONS DUE TO LONG SALES OF LOANED SECURITIES

(102) Identification of the Rule 204 violations due to long sales of securities for which loans were outstanding requires three processes. First, the CNS settlement records must be aged to identify the CNS delivery failures as of the beginning of normal trading hours that are due to trades arranged six days before. I call these the "T+6 CNS Market Open Delivery Failures." Second, any delivery failures due to short sales in the T+6 CNS Market Open Delivery Failures must be removed to find those T+6 market open

[9] The contract price is the dollar size divided by the share size.

delivery failures due to long sales. Finally, the remaining delivery failures must be compared to net long sales made in inventory accounts and margin accounts six days before, and also to outstanding stock loans to find those failures to settle long sales due to Penson's failure to recall stock loans on a timely basis. These three processes are described in the next three subsections. The remainder of this introduction describes some naming conventions that simplify the presentation.

(103) The discussions that follow refer to two types of times. First, the discussions reference the time since a trade occurred. As noted above, practitioners commonly refer to these times by the "T+" convention where T+0 is the date of a trade and T+3 is the usual settlement date. Second, the discussions reference dates corresponding to SIAC 12 CNS Reports. To reduce confusion, denote by C+0 the date of the current CNS report. Thus, trades that caused T+6 delivery failures that appear on a C+0 CNS report occurred six days earlier on report day C-6. To recap, "C+" and "C-" dates refer to the date of the CNS record while "T+" dates refer to the age of the trades aggregated in the CNS records.

(104) The following discussions also refer to quantities bought and sold, quantities received and delivered, and quantities failed to receive or deliver. Following the convention used in the trade data and the CNS reports, all quantities that represent future or current share flows into Penson (share purchases and shares received) and shares due (quantities failed to receive) are represented with positive signs. All other quantities (shares sold, shares delivered, and shares failed to deliver) are represented with negative signs.

Aging the CNS Settlement Records to Find the T+6 Failures

(105) The daily SIAC 12 CNS reports for Penson's SunGard Phase 3 platform (NSCC account number 234) provide information about Penson's CNS net settlement status in each security. For each day, the report indicates the opening position. If the opening position is zero, no value appears in the Opening Position field. The next three columns identify three adjustments that must be made to the opening position to obtain the closing position. "Settling Trades" aggregates net new trades that settle that day, i.e., trades that Penson or its correspondent clients arranged three days ago. The age of these trades is almost always T+3. "StockDiv/Misc. Activ" aggregates net share flows due to stock dividends and other unusual events. "Receipts/Deliveries" aggregates shares Penson received from settlement or delivered to settlement that day. The closing position is equal to the opening position plus the sum of these three variables. It is exactly equal to the reported opening position on the next day. If the closing position is zero, no value appears in the closing position field in this report.

(106) If the closing position is not zero, a settlement failure has occurred. If the closing position is negative, Penson failed to deliver shares that Penson should have delivered, either that day or earlier. If it is positive, Penson is owed shares by one or more other participants who failed to deliver.

(107) Closing settlement failures can change from day to day as new settling trades and receipts and deliveries occur. The closing position thus may be the sum of settlement obligations incurred on various days. This case involves delivery obligations incurred that did not settle by the beginning of normal trading hours on day T+6. The

identification of these specific failures requires a decomposition of the closing position by the age of the trade.

(108) The calculations necessary to do this decomposition depend on how the CNS system allocates net purchases and net receipts to settlement failures. It allocates them on a first-in, first-out basis: Net purchases (positive net settling trades) and net receipts (positive net receipts/deliveries) are first allocated to the oldest (earliest) settlement delivery failure, and if additional shares remain, then to more recent failures. When the opening balance is negative, negative net settling trades (net sales) create new T+3 delivery failures if not offset by unallocated net positive receipts. Using this rule, I decomposed all closing positions by the age of the trade. Three additional assumptions are necessary to do the decomposition.

(109) First, the available data do not indicate the age composition of CNS opening positions that appear on the first day for which CNS reports are available to me. I assumed that these positions all came from T+4 trades, though in many cases, their average age may be greater. This assumption favors the Respondents.

(110) Second, the SIAC 12 CNS reports provided to me are not complete. A total of 17 trading days are missing during the period relevant to this case.[10] I thus do not know the age composition for opening positions that appear on the first day following a missing day. I made the following assumptions with respect to these positions:

a. If the CNS opening position was exactly the same as the last reported closing position, I assumed that no settlement activity occurred in this security on the

[10] The missing dates are 10/13/2008, 11/11/2008, 3/12/2009, 4/13/2009, 4/16/2009, 5/21/2009, 5/22/2009, 6/4/2009, 10/12/2009, 11/11/2009, 12/15/2009, 4/26/2010, 5/4/2010, 10/11/2010, 11/11/2010, 10/10/2011, and 11/11/2011.

intervening day(s) for which data are missing. This assumption reflects the most likely outcome: In the Penson CNS data, on security-days for which data are available and on which the opening position is equal to the closing position, no settlement activity occurred on 98.8% of these 66,870 security-days.

b. If the opening position differed from the last reported closing position, I assumed that these entire positions all resulted from the failures of T+4 net trades, though in many cases, their average age may be greater. This assumption favors the Respondents.

c. Third, I assumed that all trades were arranged with normal-way settlement, that is, they were arranged to settle on day T+3. Trades can be arranged with special settlement terms so that they settle earlier or later, but special settlement terms are very rare. I assumed that none appear in this sample. I do not expect that this issue has a material impact on the results.

(111) Using these methods, for every CNS report day available to me, I identified what portion of the reported opening position, if any, was due to T+6 trades. This portion is exactly equal to the portion of the reported closing position on the previous day (C-1) that then was due to T+5 trades.

(112) I computed the T+6 CNS Market Open Delivery Failures for a given day by adding the current net settling trades (if positive) to that portion of the CNS opening position that was due to T+6 trades. The result, if negative, is the T+6 CNS Market Open Delivery Failures. At the beginning of the day, net settling trades are expected to settle and thus (if positive) will reduce any delivery liabilities. Note that if any failures are older than

T+6, I apply any net settling purchases to these failures before applying them to the T+6 failures.

(113) I understand that Penson did not borrow to settle T+6 trades before the beginning of normal trading hours on T+6 or on earlier days. Any such borrowings (if sufficiently large) would have allowed Penson to meet the close-out requirements of Rule 204. If the borrowings had occurred on T+5 (C-1) before the 3:10PM CNS cutoff (called "Drops" by practitioners) for delivering borrowed shares (or if the borrowings had occurred on an earlier day), they would have reduced the CNS position so that no T+6 delivery failure would be observed at the open.[11]

(114) I further understand that Penson did not buy-in to settle T+6 long sale failures before the beginning of normal trading hours on T+6 or on earlier dates. Any such buy-ins (if sufficiently large) would have allowed Penson to meet the close-out requirements of Rule 204, but would not have reduced Penson's reported CNS position until three days later, so that an adjustment would have to be made. I made no such adjustments on the assumption that no such buy-ins occurred.

Adjustments for T+6 Delivery Failures Due to Short Sales

(115) The T+6 CNS Market Open Delivery Failures may include delivery failures of short sales. For example, if a short sale fails to settle on T+3 (C-3) and is bought-in on T+4 (C-2), the buy-in purchase will not settle until T+7 (C+1), and the T+6 CNS Market Open Delivery Failures in the current (C+0) CNS record will include these trades. I used three alternative methods to remove these trades.

[11] Unlike purchased shares that typically settle in three days, borrowed shares are delivered on the same day.

a. **Method I (All T+6 short sales fail to settle by open T+6).** Most conservatively, I assumed that all net short sales arranged six days before (on C-6) did not settle. I found these trades in the trade blotter, and subtracted their net sum (if negative) from the T+6 CNS Market Open Delivery Failures on C+0 to estimate the T+6 long sale delivery failures. This treatment is extraordinarily favorable to the Respondents because most of these short sale trades did indeed settle before T+6. I include it in this analysis to provide an indisputable lower bound for the T+6 long sale delivery failures. I have no doubt that the actual T+6 long sale delivery failures are greater than this method estimates.

b. **Method II (All T+6 short sales fail to settle if not borrowed on T+3).** I understand that Penson would try to borrow shares on T+3 (C-3) and on the morning of T+4 (C-2) before the market opened to settle its short sales, and Penson always, or almost always, borrowed only to settle short sales, and not for other purposes. Accordingly, I identified all net new stock borrowings on T+3 (C-3) to identify short sales that would have settled then. I used these borrowings to reduce the potential T+6 failed short sales. This treatment is favorable to the Respondents because some of the remaining short sale trades settled before T+6, either because shares were borrowed on T+4 or T+5 (C-2 or C-1) or because the clients covered their positions (bought them back) on T+1 or T+2 so that their purchases settled on T+4 or T+5 (C-2 or C-1). I include Method II in this analysis to provide a more reasonable lower bound for the T+6 long sale delivery failures. I am confident that the actual T+6 long sale delivery failures are greater than this method estimates.

c. **Method III (The only C-6 short sales that fail to settle by open T+6 are those bought in on T+4)**. I understand that Penson would buy-in before market open on T+4 (C-2) to close out its short sale failures when it could not borrow shares. Accordingly, I identified all net buy-in purchases made in short subaccounts (type 3) on day C-2.

I identified a day C-2 subaccount type 3 net purchase as a buy-in if the net trade in the security on day C-2 was positive and the net type 3 trade size on day C-6 in the same account was negative. I identified the net buy-in as the smaller of the absolute values of these two net trade sizes. For each security, I then aggregated all buy-ins on that day (C-2) across all accounts to estimate all net buy-in purchases made in short subaccounts (type 3) on day C-2.

To estimate the T+6 long sale delivery failures under Method III, I subtracted the T+4 (C-2) buy-ins from the T+6 CNS Market Open Delivery Failures. This adjustment removes short sales in the T+6 CNS Market Open Delivery Failures that were bought-in on T+4 (C-2) but which would not have settled until T+7 (C+1). The method does not require adjustment for short sales settled by borrowing on days T+5 or earlier (C-1 or earlier) because such borrowings already will have reduced the T+6 CNS Market Open Delivery Failures.

This treatment is favorable to the Division if any failed short sales on C-6 (T+0) were not bought-in on T+4 as required by the Rule 204 close-out procedures for short sales. I understand that Penson followed the Rule 204 close-out procedures for short sales. In which case, this method should accurately estimate the T+6 long sales failures at beginning of regular trading hours on C+0. If some short sales were not bought-in before T+6 market open, this method would provide an upper bound on the T+6 long sale failures.

T+6 Long-Sale Delivery Failures Due to Outstanding Stock Loans

(116) For each of the above three methods used to identify T+6 long sale failures at the beginning of regular trading hours on C+0, I identified a Rule 204 long-sale close-out violation due to an outstanding security loan by identifying 1) the days when a T+6 long sale delivery failure existed at the beginning of regular trading hours on C+0, for which 2) one or more stock loans in the same security were outstanding at the close of the previous day, and 3) the total net trades appearing in type 0 and 2 subaccounts (inventory accounts and margin accounts) six days ago (C-6) was negative (long sales).

(117) The final comparison to the total net long sales appearing in type 0 and 2 subaccounts (inventory accounts and margin accounts) eliminates delivery failures that might have been due to long sales in a cash account for which the security was not held by Penson and was delivered to Penson in time to settle the trade. This comparison also eliminates T+6 delivery failures that might have been due to unsettled short sales that Methods II and III do not identify.

(118) I identified the size of the violation as the minimum of the absolute sizes of 1) the T+6 CNS market open delivery failure adjusted for short sales, 2) the aggregate loans outstanding on the previous day (C-1), and 3) the total net long sales appearing in type 0 and type 2 subaccounts (inventory accounts and margin accounts) six days ago (C-6). The last value was computed as the sum of all sales less the sum of all purchases made in type 0 and type 2 subaccounts, if the former were larger than the latter.

(119) When counting violations, I considered only those violations for which the stock loan contract price was greater than 0.[12] Stock trades often fail to settle when a stock is worthless. Since such trades are of little interest to anyone, I have excluded them from the analysis.

METHOD USED TO VALUE RULE 204 VIOLATIONS DUE TO LONG SALES OF LOANED SECURITIES

(120) Penson benefited from failing to deliver securities to settle long sales when it had lent out those securities. The benefit can be measured two ways, and I estimated the costs both ways for each of the three methods described above to identify violations:

(121) **Method A (Loans still outstanding on T+6).** By not recalling shares earlier, Penson enjoyed revenue from outstanding stock loans. These revenues were earned between T+5 and T+6. This measure is an estimate of the benefit that Penson obtained by failing to settle long sales (for which it had lent out the securities) before the long sale close-out requirements of Rule 204 became effective.

(122) **Method B (Shares should have been borrowed on T+6).** By not borrowing on the morning of T+6 to settle the failed long sales, Penson avoided borrowing costs. These costs would have accrued between T+6 and T+7. This measure is an estimate of the benefit that Penson obtained by failing to meet the long sale close-out requirements of Rule 204 when it had lent out the securities.

(123) To estimate the benefits that Penson obtained from failing to close out long sale delivery failures before the T+6 Close-out Deadline when it had stock loans outstanding in the

[12] As discussed earlier, contract prices are whole numbers. Thus, this condition is identical to requiring that the contract price be greater than or equal to 1.

same securities, I applied the average rebate rate reported in Penson's records of open stock loans to the amount in violation to estimate the total amount of money Penson earned on the outstanding stock loans, up to the size of the delivery failure.

(124) For Method A, I used the size-weighted average rate from all lent loan contracts outstanding on day T+5 (C-1). For Method B, I used the size-weighted average rate from all borrowed loan contracts outstanding on day T+6 (C+0). If no such contracts were outstanding, I used the size-weighted average rate from all lent loan contracts outstanding on day T+6 (C-0). If no such contracts were outstanding, I used the size-weighted average rate from all borrowed loan contracts outstanding on day T+5 (C-1). Finally, if no such contracts were outstanding, I used the size-weighted average rate from all lent loan contracts outstanding on day T+5 (C-1).

(125) I computed the dollar amount earned using the formula generally used by broker-dealers and discussed above in paragraph (46).[13] For Method A, I based the calculation on the calendar days between T+5 and T+6. For Method B, I based the calculation on the calendar days between T+6 and T+7.

(126) My analyses underestimate these benefits because I do not consider any benefits that Penson may have obtained from long sale trades that failed to settle after T+6. These analyses also underestimate these benefits because they include only trades processed in the SunGard Phase 3 platform (account number 234) and not also trades processed in the Broadridge BPS platform (account number 158). My analyses also exclude days for which SIAC 12 CNS reports were not available to me.

[13] The formula depends on the contract price, which is 102% of the stock price at the time the contract is struck, rounded up to the nearest whole number. The contract price can vary from contract to contract within a day because prices vary through time and not all contracts are struck at the same time. I used the size-weighted average contract price.

VII. RESULTS

(127) Exhibit 1 tabulates the Rule 204 long-sale close-out violations that I identified were due loaned stocks using the three methods of adjusting for short sale delivery failures described above. Columns b to d of the table correspond to these three methods. The last column (e) presents the average of columns c and d (Methods II and III.) Although they use different approaches, both methods should accurately identify the violations, subject to the concerns noted above. Their average presents my best estimate of the extent and benefit of the violations. The results discussed below are obtained from this final column.

(128) Row 2 tabulates the total number of trading days within the relevant period for which I found that violations occurred in one or more securities. I found that violations occurred on 642 of the 778 trading days (82%).

(129) Row 4 tabulates the total number of securities for which one of more violations occurred during the relevant period. I found that violations occurred in 946 different securities.

(130) Row 5 tabulates the total number of security-days for which I found a violation. I found a total of 1,704 violations in a given security and on a given day.

(131) Rows 6 and 7 tabulate the total shares and the dollar value of the shares for which I found violations during the relevant period. I found violations involving 14,447,806 shares worth $141,613,369. The failed shares are large in relation to the dollar value of the fails because settlement failures in penny stocks may involve large numbers of low priced shares. The total dollar value of the failed trades thus is a better indicator of their economic significance than is their total number.

(132) Finally, Rows 8-10 tabulate the total one-day gains that Penson obtained from failing to close out long sales when it lent out the stocks when required. Row 8 presents this estimate computed by Method A which assumes that Penson improperly earned stock loan rebate fees from T+5 to T+6 on its outstanding stock loans, up to the size of the T+6 long sale delivery failures. Row 9 presents this estimate computed for Method B which assumes that Penson should have borrowed from T+6 to T+7 to settle the trades on T+6, up to the size of the T+6 long sale delivery failures. Row 10 provides the average of these two estimates. Based on the average estimate, I found that Penson's one-day benefit from failing to settle long sales for which it lent out the securities was $6,165,096.

(133) Note that the total benefit that Penson obtained from failing to close out long sale failures on time was greater than this figure. First, because this figure only represents violations that I identified in the SunGard Phase 3 trading platform and not also in the Broadridge BPS platform for which no data was made available to me. Second, because I could obtain no results on days for which SIAC 12 CNS reports were missing. Third, because this figure does not evaluate benefits that accrued if Penson failed to close out these failed positions by the market close on T+6. Finally, because this figure only represents the rebates earned on outstanding stock loans. It does not also value the costly restrictions to which Rule 204(b) subjected Penson when it had failed to properly close-out its positions.

VIII. Conclusion

(134) Rule 204 of Regulation SHO provides close-out procedures for long sales that Penson apparently often did not follow when it had lent stock out that it otherwise could use to

settle sales. These loans generated substantial revenue for Penson as these stocks were generally on special and hard to borrow, and thus had high rebate rates.

(135) The first requirement of Rule 204 of Regulation SHO is that clearing participants deliver securities for clearance by their settlement date. When this does not happen, if a clearing participant can demonstrate that a delivery failure occurred due to a long sale, the Rule grants the participant additional time to close out the settlement failure. When it had stock loans outstanding, Penson regularly took this additional time, and more, to close out its settlement failures.

(136) The fact that Penson was able to clear up or close out many other delivery failures earlier than T+6 is not relevant to the question of whether it failed to follow Rule 204 for fails that reached the T+6 Close-out Deadline. On that morning, Penson could have complied with the Rule by simply borrowing shares, if possible, or by purchasing them. It could have avoided the close-out entirely by simply recalling its loans earlier.

(137) I formed the opinions described in this report based upon my extensive experience as an observer, regulator, and analyst of financial markets, and I am prepared to testify regarding all of these opinions.

____________________	September 29, 2014
Lawrence Harris	Date

Appendix A:

Formulas for Identifying and Valuing Rule 204 Long Sale Violations Due to Loaned Securities in the Penson Case

Preliminaries

(138) Let c represent the sequence number of a CNS settlement day. The number of days between c and c + 1 will be one for most weekday reports (except Friday), and three for most Friday reports.

(139) Most trades that settle on CNS settlement day c are T+3 trades that were arranged three days ago on c − 3. A T+6 trade that is included in the closing CNS position on CNS settlement day c were arranged on c − 6.

Trade Blotter

(140) Let $q^s_{i,c,a,b}$ be the size of the i^{th} trade of security s on CNS settlement day c in account a, subaccount type b (where $q^s_{i,c,a,b}$ is > 0 for a purchase and $q^s_{i,c,a,b}$ is < 0 for a sale).

(141) Penson net purchases in security s on CNS settlement day c in subaccount type b are given by

$$Q^s_{c,b} = \sum_i \sum_a q^s_{i,c,a,b}$$

Loan Contracts

(142) The loan data include an indicator for whether Penson was the borrower or lender in the loan contracts. The quantities are all positive. Let $BL^s_{i,c}$ indicate with a "L" that Penson loaned stock in its i^{th} stock loan contract in security s on CNS settlement day c, and with a "B" that it borrowed stock.

(143) Let $l^s_{i,c}$ be the outstanding balance of the i^{th} stock loan in security s on CNS settlement day c.

Let $r^s_{i,c}$ be the rebate rate on the i^{th} stock loan in security s on CNS settlement day c.

Let P^s_c be the contract price for all stock loans in security s on CNS settlement day c.

(144) The total quantity of shares loaned on stock loan contracts in security s on CNS settlement day c is given by

$$LoanQ^s_c = \sum_i l^s_{i,c} \times \left(BL^s_{i,c} = L\right)$$

(145) The total quantity of shares borrowed on stock loan contracts in security s on CNS settlement day c is given by

$$BorrowQ^s_c = \sum_i l^s_{i,c} \times \left(BL^s_{i,c} = B\right)$$

(146) The size-weighted average rebate rate for lent and borrowed shares in security s on CNS settlement day c are given by

$$LendRate^s_c = \sum_i \frac{l^s_{i,c} \times \left(BL^s_{i,c} = L\right)}{\sum_j l^s_{j,c} \times \left(BL^s_{i,c} = L\right)} \times r^s_{i,c}$$

$$BorrowRate^s_c = \sum_i \frac{l^s_{i,c} \times \left(BL^s_{i,c} = B\right)}{\sum_j l^s_{j,c} \times \left(BL^s_{i,c} = B\right)} \times r^s_{i,c}$$

CNS ACCOUNTS

(147) Let $\mathrm{CNSClosePosition}^s_c$ be the closing position in the CNS accounts in security s on CNS settlement day c. It is equal to the next day opening position:

$$\mathrm{CNSOpenPositon}^s_c = \mathrm{CNSClosePosition}^s_{c-1}$$

(148) Let SettingTrades_c^s be the net settling trades in security s on CNS settlement day c.

Let Misc_c^s be the net miscellaneous flows in security s on CNS settlement day c.

Let Receive_c^s be the net receipts/deliveries in security s on CNS settlement day c.

(149) The CNS identity is

$$\text{CNSPosition}_c^s = \text{CNSClosePositon}_{c-1}^s + \text{SettingTrades}_c^s + \text{Misc}_c^s + \text{Receive}_c^s$$

(150) Let the FIFO decomposition of the CNS Position in security s on CNS settlement day c be given by $CNSPosition_{c,\tau}^s$ where $\tau = 3, 4, \ldots$ indicates the "T+τ" age of the position.

THE ALGORITHM

(151) The "T+6 CNS Market Open Delivery Failure referenced in the report is given by

$$CNSOpenFailure_c^s = \min\left(CNSClosePosition_{c-1,5}^s + \max(SettingTrades_c^s, 0), 0\right),$$

that is, the sum if it is negative.

THE SHORT SALE ADJUSTMENTS QUANTITIES

(152) **Method I**: Assume that all T+6 short sales fail to settle by open T+6.

$$SSAdj_c^s = \min\left(Q_{c-6,3}^s, 0\right) = \min\left(\sum_i \sum_a q_{i,c-6,a,3}^s, 0\right)$$

(153) **Method II**: Assume that all T+6 short sales fail to settle if not borrowed on T+3.

$$SSAdj_c^s = \min\left(Q_{c-6,3}^s + \max(BorrowQ_{c-3}^s - BorrowQ_{c-4}^s, 0), 0\right)$$

(154) **Method III**: Assume that the only T+6 short sales that failed to settle by T+6 are those bought in on T+4. Buy-ins on T+4 are net purchases in the short account on T+4 when there were net sales in the short account on T+0. In account a, for security s on CNS

settlement day c, the net purchases in the short account on T+0 and on T+4 are respectively given by

$$Q^s_{c-6,a,3} = \sum_i q^s_{i,c-6,a,3}$$

$$Q^s_{c-2,a,3} = \sum_i q^s_{i,c-2,a,3}$$

(155) The T+4 buy-in on account a, for security s corresponding to CNS settlement day c is

$$BuyIn4^s_{c,a} = \begin{cases} -\min\left(-Q^s_{c-6,a,3}, Q^s_{c-2,a,3}\right) & \text{if } Q^s_{c-6,a,3} < 0 \text{ and } Q^s_{c-2,a,3} > 0 \\ 0 & \text{Otherwise} \end{cases}$$

(156) The adjustment quantity is

$$SSAdj^s_c = \sum_a BuyIn4^s_{c,a}$$

(157) The T+6 open delivery failure adjusted for short sales is

$$AdjCNSOpenFailure^s_c = min(CNSOpenFailure^s_c - SSAdj^s_c, 0),$$

that is, the adjusted quantity if is negative.

THE VIOLATIONS

(158) T+6 long-sale delivery failures due to outstanding stock loans are identified when

$$AdjCNSOpenFailure^s_c < 0 \text{ and } LoanQ^s_{c-1} > 0 \text{ and } Q^s_{c-6,2} < 0$$

(159) The absolute value of the quantity associated with the violation in security s on CNS settlement day c is given by

$$ViolationQ^s_c = \min\left(-AdjCNSOpenFailure^s_c, LoanQ^s_{c-1}, -Q^s_{c-6,2}\right)$$

if the above condition is holds and more generally by

$$ViolationQ^s_c = \min\Big(-AdjCNSOpenFailure^s_c, \max(LoanQ^s_{c-1}, 0), max\left(-Q^s_{c-6,2}, 0\right)\Big)$$

VALUING THE VIOLATIONS

(160) Let the contract price of security s on CNS settlement day c be P_c^s.

Let be the number of calendar days between settlement days between days $c-1$ and c.

(161) **Method A** (Loans still outstanding on T+6)

$$Fee_c^s = P_{c-1}^s \times ViolationQ_c^s \times \frac{LendRate_{c-1}^s}{360} \times Days_c$$

(162) **Method B** (New shares should have been borrowed on T+6)):

$$Fee_c^s = P_c^s \times ViolationQ_c^s \times \frac{BorrowRate_c^s}{360} \times Days_{c+1}$$

(163) Note, if the borrow rate cannot be computed, use the lend rate on c. If it is not available, use the borrow rate on $c-1$. If it is not available, use the lend rate on $c-1$.

EXHIBIT 1

TABULATION OF RESULTS

	Measure (a)	Method I (b)	Method II (c)	Method III (d)	Average of Methods II and III (e)
(1)	Number of trading days	778	778	778	778
(2)	Number of days with a violation	633	635	648	642
(3)	Percentage of days with a violation	81%	82%	83%	82%
(4)	Number of securities with a violation	917	922	970	946
(5)	Number of security-days with a violation	1,631	1,642	1,766	1,704
(6)	Number of shares in violation	13,695,951	13,823,669	15,071,943	14,447,806
(7)	Value of shares in violation	$132,927,420	$134,924,165	$148,302,573	$141,613,369
(8)	Method A gains	$5,635,623	$5,666,227	$6,340,400	$6,003,313
(9)	Method B gains	$5,841,347	$5,887,572	$6,766,185	$6,326,878
(10)	Average of A and B	$5,738,485	$5,776,899	$6,553,292	$6,165,096

Notes: Author's calculations based on methods and data described in the body of the report.

CURRICULUM VITAE

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Professional Experience

Fred V. Keenan Chair in Finance, Marshall School of Business, University of Southern California, January 1998-present; tenured Professor of Finance and Business Economics, September 1991-present; tenured Associate Professor, September 1988-August 1991; Assistant Professor, September 1982-August 1988.

Director, Interactive Brokers Group, Inc., July 2007-present (lead director since 2012, chairman of the audit committee since 2008).

Director, Clipper Fund, Inc., December 2005-present (chairman of the board of since September 2013).

Co-director, USC/CFALA CFA Review Program, 2007-present.

Academic Research Coordinator, Institute for Quantitative Research in Finance (the Q-Group), January 1990-present.

Member, Financial Economists Roundtable, July 2007-present.

Board Member, CFALA, (Los Angeles Society of Financial Analysts), July 2009-June 2011.

Executive Director, USC Marshall School of Business Center for Investment Studies, August 2007-July 2010.

Chief Economist, Madison Tyler LLC, January 2006-April 2006.

Senior Managing Director, Quantitative Research and Development, UNX, Inc., October-December 2005; full-time consultant, June-September 2005.

Chief Economist and Director of the Office of Economic Analysis, US Securities and Exchange Commission, July 2002-June 2004.

Visiting Scholar, Office of Economic Research, New York Stock Exchange, New York, September 1989-August 1990.

Economic Fellow, Office of Economic Analysis, Securities Exchange Commission, Washington, D.C., July 1988-June 1989.

Visiting Scholar, Stern School of Business, New York University, September 1989-August 1990.

Education

Ph.D., University of Chicago, December 1982 (Economics)
M.A., University of Chicago, June 1980 (Economics)
B.A., University of California, San Diego, June 1978 (Management Science), Summa Cum Laude

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Professional Designation

Chartered Financial Analyst, CFA Institute, December 2010.

Dissertation

"A Theoretical and Empirical Analysis of the Distribution of Speculative Prices and of the Relation between Absolute Price Change and Volume."

Robert Lucas, Chairman, Gale Johnson, Arnold Zellner, Jonathan Ingersoll

Research Interests

Financial market microstructure, investment management, volatility, econometrics

Books and Monographs

Harris, Lawrence (Editor), *Regulated Exchanges: Dynamic Agents of Economic Growth*, essays commissioned to commemorate the 50th anniversary of the World Federation of Exchanges, Oxford University Press, October 2010, 364pp, ISBN 978-0-19-977272-8.

Harris, Larry, *Trading and Exchanges: Market Microstructure for Practitioners*, an introductory textbook to the economics of market microstructure, Oxford University Press, 2003, 643pp.

Chapter 22 (Performance Evaluation and Prediction) reprinted in *The Journal of Performance Measurement* 17 (2) Winter 2013 (part 1) and 17 (3) Spring 2013 (part 2).

Most notably reviewed by Mark Kritzman, *Journal of Investment Management* 1(1), 2003 Q1, 219-220.

Harris, Larry, *Instructor's Manual to Trading and Exchanges: Market Microstructure for Practitioners*, Oxford University Press, 2004.

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Harris, Lawrence, "Liquidity, Trading Rules and Electronic Trading Systems," *New York University Salomon Center Monograph Series in Finance and Economics*, Monograph 1990-4, February 1991 (refereed).

Refereed Articles

Angel, James, Lawrence Harris, and Chester Spatt, "Equity Trading in the 21st Century: An Update," *Quarterly Journal of Finance*, forthcoming, 2014.

Harris, Lawrence, Ethan Namvar, and Blake Phillips, "Price Inflation and Wealth Transfer during the 2008 SEC Short-Sale Ban," *Journal of Investment Management* 11 (2), 2013 Q2, 1-23 (lead article).

Received Special Distinction Award for second best paper published in *JOIM* during the year.

Angel, James, Lawrence Harris, and Chester Spatt, "Equity Trading in the 21st Century," *Quarterly Journal of Finance*, v.1 (1), March 2011, p 1-53 (lead article).

Edwards, Amy, Lawrence Harris, and Michael S. Piwowar, "Corporate Bond Market Transaction Costs and Transparency," *Journal of Finance*, v 62 (3) June 2007, 1421-51.

Harris, Lawrence and Michael S. Piwowar, "Municipal Bond Liquidity," *Journal of Finance*, v. 61 (3), June 2006, 1361-1397.

Harris, Lawrence and Hans Dutt, "Position Limits for Cash Settled Derivative Contracts," *Journal of Futures Markets*, v. 25 (10) October 2005, 945-65.

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Fridman, Moshe and Lawrence Harris, "A Maximum Likelihood Approach for Stochastic Volatility Models," *Journal of Business and Economic Statistics* v. 16, No. 3, July 1998, 284-291.

Harris, Lawrence and Joel Hasbrouck, "Market versus Limit Orders: The SuperDOT Evidence on Order Submission Strategy," *Journal of Financial and Quantitative Analysis* v. 31, no. 2, June 1996, 213-231.

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Harris, Lawrence, "Consolidation, Fragmentation, Segmentation and Regulation," *Financial Markets, Institutions & Instruments* (formerly *the NYU Salomon Center Monograph Series in Finance and Economics*) v. 2, no. 5, December 1993, 1-28 (lead article).

Reprinted in *Global Equity Markets: Technological, Competitive and Regulatory Challenges*, Robert A. Schwartz, Editor; Irwin: Chicago, 1995, p. 269-301.

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Harris, Lawrence, "Estimation of Stock Price Variances and Serial Covariances from Discrete Observations," *Journal of Financial and Quantitative Analysis* v. 25 no. 3, September 1990, 291-306 (lead article).

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Op-Eds, Minor Publications, and Regulatory Letters

Harris, Larry, "A Market Structure Agenda for the SEC," *CNBC.com*, April 3, 2014 at http://www.cnbc.com/id/101551702.

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Harris, Larry, "The Hidden Costs of Credit Cards," Opinion, *Los Angeles Times*, August 4, 2011, at http://articles.latimes.com/2011/aug/04/opinion/la-oe-harris-rebates-20110804. The *Atlantic Wire* identified this op-end as one of the five best columns in the US on the day it was published. http://www.theatlanticwire.com/national/2011/08/five-best-thursday-columns/40824/

Harris, Larry, "The Increasing Need for Financial Analysis in Public Accounting Standards," Guest Editorial, *Financial Analysts Journal*, March/April 2011, Vol. 67, No. 2: 6–9 at http://www.cfapubs.org/doi/pdf/10.2469/faj.v67.n2.7

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Harris, Lawrence, "The Economics of Flash Orders," December 4, 2009 at http://www.sec.gov/comments/s7-21-09/s72109-97.pdf.

Harris, Lawrence, "Breaking the Futures Monopoly," Forbes.com Commentary, November 6, 2006, at http://www.forbes.com/opinions/2006/11/03/options-monopoly-cboe-cme-oped-cx_lh_1106options.html

Harris, Lawrence, "Comment Letter to SEC re Regulation NMS," February 5, 2005, at http://www.sec.gov/rules/proposed/s71004/lharris020505.pdf.

Harris, Lawrence, "Floor versus Automated Trading" *USC Business*, Fall/Winter 1998, p. 50-53.

Harris, Lawrence, "The Everything Exchange," *USC Business*, Spring/Summer 1997, p. 46-51.

Harris, Lawrence, "A Financial Analysis of Santa Monica's Interior Replacement Pilot Program, " *Los Angeles Apartment Age*, April 1985.

Working Papers and Manuscripts

Harris, Lawrence, Samuel Hartzmark, and David Solomon, "Dividend Juicing," September 2014.

Harris, Lawrence, "Maker-Taker Pricing Effects on Market Quotations," November, 2013.

Harris, Lawrence and Ethan Namvar, "The Economics of Flash Orders and Trading," January 4, 2013.

Harris, Lawrence, "Optimal Maintenance Strategies at California Gasoline Refiners", December 7, 2012.

Harris, Lawrence, "Homogenization of US Equity Markets," October 15, 2012.

Coughenour, Jay F. and Lawrence Harris, "Specialist Profits and the Minimum Price Increment," March 2004.

Harris, Lawrence, "Trading in Pennies: A Survey of the Issues," December 1999.

Harris, Lawrence, Order exposure and parasitic traders, December 1997.

Harris, Lawrence, "Decimalization: A Review of the Arguments and Evidence," March 1997.

Harris, Lawrence, "Does a Large Minimum Price Variation Encourage Order Display?" October 1996.

Harris, Lawrence, "The Economics of Best Execution," March 1996.

Harris, Lawrence, "The Joint Distribution of Speculative Prices and of Daily Trading Volume," May 1983.

Testimony

US Congress, House of Representatives Committee on the Judiciary Subcommittee on Intellectual Property, Competition, and the Internet hearing on "Competition and Consolidation in Financial Markets," April 1, 2011. Written testimony at http://judiciary.house.gov/hearings/pdf/Harris04012011.pdf, transcript at http://judiciary.house.gov/hearings/printers/112th/112-24_65489.PDF.

CFTC/SEC Joint Meeting on Regulatory Harmonization, September 2, 2009.

House of Representatives Committee on Commerce Subcommittee on Finance and Hazardous Materials hearing on "H.R. 1053: The Common Cents Stock Pricing Act of 1997", April 16, 1997. Written testimony at *Hearings before the Subcommittee on Finance and Hazardous Materials of the Committee on Commerce, House of Representatives on H.R. 1053*, Serial No. 105-18, April 16, 1997, p. 226-229.

Grants Received

USC Fund for Innovative Teaching, "The Corporate Achievement Trading and Exchange Game," 1991.

Institute for Quantitative Research in Finance, 1989 (with Mark Weinstein).

Curry Foundation, 1988.

Mid America Institute for Public Policy Research, 1988.

Institute for Quantitative Research in Finance, 1985 (with Lawrence Glosten).

Columbia Center for the Study of Futures Markets, 1985-1986 (with David Hirshleifer).

University of Southern California, School of Business Administration, Dean's Research Scholar, 1987-1995.

University of Southern California, School of Business Administration, Summer Research Grants, every summer in residence.

Research Honors

Member, Financial Economists Roundtable, January 2007-present.

Second Prize, Roger F. Murray Prize Competition, The Institute for Quantitative Research in Finance, 2004, for "Bond Transaction Costs."

Fuh Hwa Bond Research Award for the best fixed income paper presented at the 12th Conference on the Theories and Practices of Securities Markets, Kaohsiung, Taiwan, 2004, for "Secondary Trading Costs in Municipal Bond Market."

First Prize, Roger F. Murray Prize Competition, The Institute for Quantitative Research in Finance, 2002, for "Why People Trade?"

Winner, Paris Bourse Prize for best paper on French equity markets submitted to the Organization and Quality of Equity Markets Conference, 1996, for "Does a Large Minimum Price Variation Encourage Order Display?"

Co-winner, INQUIRE Europe, best paper presented at Paris Meetings, 1992, for "Market versus Limit Orders: The SuperDOT Evidence on Order Submission Strategy" (written with Joel Hasbrouck).

Co-winner, New York Stock Exchange Prize for best paper in the Review of Financial Studies - Western Finance Association - New York Stock Exchange Microstructure Symposium, 1990, for "Stock Price Clustering and Discreteness."

Second Prize, Roger F. Murray Prize Competition, The Institute for Quantitative Research in Finance, 1990, for "Stock Price Clustering and Discreteness."

Second Prize, Roger F. Murray Prize Competition, The Institute for Quantitative Research in Finance, 1987, for "Estimating the Components of the Bid-Ask Spread" (written with Lawrence Glosten).

Professional Activities

Associate Editor

Journal of Finance, 1990-2000
Journal of Financial and Quantitative Analysis, 1991-99
Review of Financial Studies, 1990-93

Advisory Editor

Journal of Financial Markets, 1997-2003

Editorial Board

Financial Analysts Journal, 1995-99

Ad Hoc Referee

American Economic Review
Econometrica
Financial Review
Financial Management
Journal of Banking and Finance
Journal of Business
Journal of Business and Economics Statistics
Journal of Finance
Journal of Financial and Quantitative Analysis
Journal of Financial Economics
Journal of Financial Intermediation
Journal of Financial Research
Journal of Futures
Journal of Futures Markets
Journal of Law and Economics
Journal of Portfolio Management
National Science Foundation
Quarterly Journal of Business and Economics
Review of Financial Studies

Co-Organizer and program co-coordinator, USC/UCLA/NYSE Conference on Market Microstructure, March 30-31, 1994.

Organizer and program coordinator, USC/UCLA/NYSE Conference on Market Microstructure, March 26-27, 1992.

Program coordinator, Institute for Quantitative Research in Finance 1991 Spring Seminar, "Market Microstructure," March 24-27, 1991.

Program coordinator, Institute for Quantitative Research in Finance 1990 Fall Seminar, "Quantitative Dimensions of Volatility," October 14-17, 1991.

USC coordinator of the joint USC-UCLA Finance Workshop, 1985-88.

Organizer of the USC Finance Research Seminar series, 1984-88.

Co-organizer of the USC School of Business Administration, Conference on Issues in Transactions Data and Price/Volume Relationships, April 26-27, 1984.

Conference and Panel Discussions, Session Chairmanships, Program Committees

American Finance Association Meetings
Discussions, 2009, 2005, 1998, 1994, 1993, 1990 (2 papers), 1989 (2), 1988, 1987 (2), 1986.
Program Committee and Session Chair, 2012, 2003, 1996, 1993.

Econometrica Society Meetings, Discussions, 1998, 1989, 1986.

Western Finance Association Meetings
Program Committee, 2006-2014, 1997-2004, 1993-95, 1987-91.
Discussions, 2008, 2003, 2002, 1999, 1998, 1996, 1995, 1990-93, 1987 (2 papers), 1986, 1984.
Session Chair, 2011-2012, 1999-2001, 1995, 1991, 1985.

National Bureau of Economic Research, Market Microstructure Section Conference, Discussion, Boston, December, December 6, 2013.

World Federation of Exchanges Annual Meetings, "Exchange Sector Outlook – Convergence & Divergence - The Organized Market Operators' Perspective", Panelist, Mexico City, October 29, 2013.

USC Marshall School, "Overdraft," Panelist, Los Angeles, October 22, 2013.

Notre Dame Center for Accounting Research and Education Conference, "The Impact of Technology: A Stock Exchange Perspective", Panel Chairman and Discussant, Lansdowne, VA, April 5, 2013.

Conference on Financial Economics and Accounting, Paper discussant, Los Angeles, November 16, 2012.

Georgetown Financial Markets Quality Conference, Paper discussant and panelist, Washington, DC, September, 19, 2012.

NYU Stern Market Microstructure Conference, Paper discussant, New York, NY, June 1, 2012.

TraderForum Conference, "Trends in US Equity Market Listings," Panelist, Santa Monica, CA, May 12, 2011.

USC Marshall School, "Inside Job," Panelist, Los Angeles, January 31, 2011.

Broadway Federal Savings Bank, "Public Forum II on the Financial Crisis," Panelist, Los Angeles, CA, March 21, 2009.

USC Marshall Partners, "So Where Do We Go from Here?," Panelist, Orange County, November 6, 2008.

USC Marshall School Alumni Association, "The Government Role in the Financial Sector," Panelist, New York, October 23, 2008.

USC Marshall School of Business Center for Investment Studies, "What's Happening in the Markets?," Organizer and Panelist, Los Angeles, CA, October 7, 2008.

Economic Roundtable hosted by Congressman Adam Schiff, Panelist, Pasadena, CA, August 20, 2008.

USC Marshall Partners and Marshall Alumni Association, "Panel Discussion on Financial Crises," Panelist, San Francisco, CA, August 11, 2008.

Broadway Federal Savings Bank, "Public Forum on the Financial Crisis," Panelist, Los Angeles, CA, October 11, 2008.

Milken Institute, California State Forum, Panelist, "California's Economy: Recovery or Recession," Santa Monica, CA, June 5, 2008.

ReFlow Symposium, Panelist, "Overview of Liquidity Innovations", Squaw Valley, CA, February 8, 2008.

Institute for Quantitative Research in Finance, "Implied Liquidity from Redundant Futures Markets," Scottsdale, AZ, October 2007.

Bloomberg Focus, Subprime Shockwaves Panel, Panelist, Beverly Hills, CA, September 25, 2007.

ReFlow Symposium, Panelist, "The Costs of Liquidity for Mutual Funds", Squaw Valley, CA, February 16, 2007.

Directors' Roundtable, Moderator-Panelist, "How to Get Board of Directors Investigations Right," Santa Monica, CA February 8, 2007.

American Finance Association, "The Economics of Regulating Financial Markets: Perspectives from Former SEC Chief Economists," two hour panel discussion, January 6, 2006.

12th Conference on the Theories and Practices of Securities Markets, Kaohsiung, Taiwan, December 17, 2004, discussed paper and chaired session.

Hong Kong University of Science and Technology Finance Symposium, Hong Kong, December 13, 2004, discussed paper and chaired session.

Financial Economics and Accounting Conference, discussed paper, Los Angeles, November 19, 2004.

American Enterprise Institute, Conference on "Market Shock and Trading Efficiency," Discussed paper, Washington, DC, June 10, 2004.

Securities Industry Association 5th Annual Conference on Market Structure, New York, Panel Discussion on "Views to the New Era," New York, May 21, 2004.

University of Chicago Graduate School of Business, Panel discussion on "How to Fight Corporate Fraud," 52nd Annual Management Conference, Chicago, May 14, 2004.

New York Stock Exchange Conference on Global Trading, Sarasota, Florida, Session Chair, March 12, 2004.

Bank for International Settlements/Federal Reserve Bank of Chicago Conference on Market Discipline, Chicago, Panel Discussion on Policy, November 1, 2003.

Securities Industry Association 4th Annual Conference on Market Structure, New York, Panel Discussion on Market Structure, June 13, 2003.

Society for Financial Studies Conference on Investments in Imperfect Capital Markets, Northwestern University, Discussion, May 20, 2002.

London School of Economics Financial Markets Group Conference, "Competition among Exchanges," London, Discussion, May 18, 2000.

Plexus Group Client Conference, Ojai, California, Session Chair, May 2, 2000.

National Bureau of Economic Research, Market Microstructure Section Conference, Discussion, Boston, December 4, 1997.

JFI Symposium on Asset Liquidity: The Role of Institutions and the Microstructure of Markets, Discussion, St. Louis, June 8, 1997.

Indiana University Summer Finance Symposium, Program Committee, 1997, 1995, 1993.

USC CIBEAR Seminar on Japanese Financial Markets, Session Chairman, June 1994.

Pace University Conference on What Institutions Expect from Brokers and Markets at the Dawn of the Twenty-first Century, Discussion, New York, April 13, 1994.

Memphis State University Conference on Competition for Order Flow, Program Committee, March 24-25, 1994.

National Bureau of Economic Research Conference on the Industrial Organization of Security Markets, Discussion, Key Largo, January 20-22, 1994.

Duke University Conference on Global Competition in the Market for Markets, Panel discussion, November 3, 1993.

New York University Salomon Center Conference on Global Equity Markets, Session Chair, October 22, 1993.

Federal Reserve Bank of St. Louis Economic Policy Conference, "The Stock Market: Programmed Chaos?," Discussion, October 22, 1988.

USC Empirical Results in Asset Pricing Theory Conference, Discussion, November 1985.

USC Deficit Conference, Discussion, Spring 1983.

USC Event Study Conference, Discussion, Spring 1983.

Notable Presentations

Ono Conference: The Capital Market and Regulation – Where To?, "A Global View of the Prospects for Vibrant Israeli Capital Markets," keynote speech, Kiryat Ono, Israel, November 22, 2013.

BIRS Conference on High Frequency Trading, "High Frequency Trading and Public Policy," Keynote Conference Introductory Speech, Banff, Alberta, Canada, September 2, 2013.

National Association for Business Economics, Los Angeles Chapter, "The Effects of Fertility Rates on Wages, Consumption, Housing, Retirement, Fiscal Balances and Trading Volumes," Los Angeles, May 22, 2013.

USC Asia/Pacific Business Outlook Conference, session speech, "From Fiscal Cliff to Fiscal Abyss" Los Angeles, April 9, 2013.

Foothill Workforce Investment Board, "The Fiscal Cliff and its Resolution," Sierra Madre, CA, December 6, 2012.

RVW Investing Wealth Panning Summit, "Post-Election Economic Analysis: What To Expect Over The Next Presidential Term," Beverly Hills, CA, November 13, 2012.

Opus Connect, "Drowning in Debt: Prospects for Rescue," Century City, June 15, 2012.

USC Asia/Pacific Business Outlook Conference, session speech, "The Implications of Financial Imbalances for International Economic Growth," Los Angeles, March 23, 2012.

Economic and Entrepreneur Summit, Keynote speaker, "Current Issues in the Macro Economy," Keynote speaker, Pasadena, January 26, 2012.

Korean Capital Markets Institute Annual Conference, Keynote speaker, "Electronic Trading and Competition: The Impact of Electronic Trading on How Traders Compete for Best Price and How Exchange Service Providers Compete for Order Flow," Seoul, September 28, 2011.

East Coast CTO Forum, "Current Issues in the World Macro Economy," New York, November 29, 2011.

SAC Capital Advisors Third Annual Quant Research Conference, "Recent Developments in Market Microstructure," New York, New York, November 15, 2011.

BJE, "Principles for Selecting Investment Managers," Los Angeles, November 10, 2011.

Association for Corporate Growth, Los Angeles Chapter, "Dueling Economists," Los Angeles, November 2, 2011.

Research Council on Global Investments, "Recent Developments in Market Microstructure," New York, New York, June 17, 2011.

Niagara Institutional Dialog Conference, "Debate on the Benefits of Reg NMS," Niagara, Ontario, June 15, 2011.

Santa Barbara Economic Conference, "Current Issues in the Macro Economy," Santa Barbara, March 3, 2011.

Opus Connect, "Current Issues in the Macro Economy," Century City, January 18, 2011.

National Association of Business Economists, Los Angeles Chapter, Lunch Speaker, "Double Dip and Inflation Concerns," Los Angeles, November 8, 2010.

Notre Dame Conference on Current Topics in Market Regulation, Keynote dinner speech, "The Political Economy of Recent Regulatory Issues," Chicago, May 20, 2010.

The Twenty Five, breakfast speaker, "Current Issues in the Macro Economy," Century City, January 27, 2010.

Warwick University, Annual Warwick Lecture in Finance, "Principles for Financial Market Regulation," London, September 23, 2009.

USC Board of Trustees, "The Financial Crisis," Panelist, La Quinta, CA, April 4, 2009.

USC Marshall School Alumni Association, "The Financial Crisis in Banking," San Francisco, March 5, 2009.

LG Electronics, "An Economic Prospectus," San Diego, February 2, 2009. Two-hour presentation with Q&A on the current financial crisis.

National Science Foundation - Deutsche Forschungsgemeinschaft (DFG) Joint Conference on "Contextualizing Economic Behavior, "Reputation in Block Trading: Implications for Floor versus Automated Trading," New York, August 22, 2008.

Program in the Law and Economics of Capital Markets, Columbia University, "Intellectual Property Issues in Financial Markets," New York, May 20, 2008.

American Stock Exchange Board of Governors Meeting Presentation, "Amex Internationalization Strategies," New York, November 29, 2006.

Financial News Institutional Trading Forum, 2006 Conference on The Quest for Liquidity, Keynote Speaker, "The Economics of Reg NMS," Santa Monica, CA, November 15, 2006.

McMaster DeGroote School of Business Conference on Market Structure and Market Integrity, Keynote Speaker, "The Economics of Reg NMS," Toronto, November 13, 2006.

Securities and Exchange Commission Roundtable on the Regulation SHO Pilot, Panelist, Washington DC, September 15, 2006.

Occidental Petroleum Board of Directors, Executive Education Program, "Why People Trade," Los Angeles, July 20, 2006.

Mutual Fund Director's Forum "Lifting the Veil - Investment Industry Trading Practices and Best Execution Workshop," participated in an hour panel on economics of best execution, Chicago, June 7, 2006.

ReFlow Symposium, Keynote dinner speaker, presented one-hour speech on how buy-side traders lose, Squaw Valley, CA, February 7, 2006.

Boundaries of SEC Regulation Conference, Keynote dinner speaker, presented 45-minute speech on the political economy of the SEC, Claremont College, February 3, 2006.

Mutual Fund Director's Forum "Lifting the Veil - Investment Industry Trading Practices and Best Execution Workshop," participated in hour panel on economics of best execution, New York, November 2005.

USC Alumni Association, USC on the Road, Keynote breakfast speech, "Why People Trade (and Perhaps Why They Shouldn't)", Chicago, October 14, 2005.

Deutsche Bank Prize in Financial Economics Symposium "Market Efficiency Today," delivered 45 minute talk on "Liquidity Efficiency" to conference in honor Gene Fama, Frankfort, October 6, 2005.

USC Marshall Alumni Association Orange County Breakfast, Keynote speech, "Why People Trade (and Perhaps Why They Shouldn't)", Irvine, September 21, 2005.

Institutional Investor TraderForum 2005 Winter Workshop, presented one-hour speech on the Economics of Reg NMS, New York, January 20, 2005.

USC Marshall School of Business Ethics Seminar Series, presented seminar, "Ethics in Business and Politics: Perspectives Gleaned from Serving at the SEC," Los Angeles, November 12, 2004.

Chicago Quantitative Alliance Fall 2004 Meeting, Delivered one-hour talk, "The Economics of Reg NMS," to 250 members, Chicago, September 22, 2004.

Boston College, 2nd Annual Finance Advisory Board Conference, Delivered talk, "What Disclosures Can Prevent Future Mutual Fund Crises?," Boston, June 11, 2004.

University of Delaware, Weinberg Center for Corporate Governance, Two hour panel discussion on Enron and Corporate Governance Reform, April 29, 2004. Copanelists included William Crist, former chairman, CALPERS; Jack Jacobs, Justice, Delaware Supreme Court; Bob May, Interim CEO, HealthSouth; Carl McCall, former comptroller, State of New York; and Shaun O'Malley, former chairman, Freddie Mac.

USC Marshall Center for Investment Studies, inaugural speaker, Distinguished Speaker Series, "The Future of the Mutual Fund Industry," April 12, 2004.

Oxford University Press Academic Seminar at the Allied Social Sciences Associations Conference, "Competition among Exchange Service Providers," San Diego, January 4, 2004.

National Bureau of Economic Research, Market Microstructure Section Conference, Keynote lunch speech, "Simplicity and Discrimination," Palm Beach, FL, December 4, 2003.

National Research Council, Computer Science and Telecommunications Board, Exploratory Meeting on Information Technology and Competition, participated in a day-long panel discussion of where potential and future problems may lie with respect to antitrust and intellectual property law and enforcement, Washington DC. November 7, 2003.

International Securities Exchange, Keynote dinner speaker, "A Tale of Two Competitions, Chicago, October 1, 2003.

Plexus Group Client Conference, Keynote speaker, presented an hour speech, "Market Microstructure from the Other Side," Napa, CA, September 22, 2003.

The Strategic Research Institute, Art of Indexing Conference, featured speaker, presented a 45-minute speech, "Rebalancing Index List Changes," Arlington, VA, September 16, 2003.

US Military Academy, Faculty of Social Sciences, presented an hour seminar to the social sciences faculty on current issues in financial market regulation and led three cadet classes, West Point, NY, September 8, 2003.

Darden Batten Institute Conference on "Investing in Emerging Markets: Governance, Ownership, and Organization," presented three-quarter hour session "The Distribution of Investment Returns in Emerging Markets," Charlottesville, Virginia, May 30, 2003.

SEC Hedge Fund Roundtable, participated in panel discussion, "The Market Impact of Hedge Funds," Washington DC, May 15, 2003.

New York Stock Exchange Conference, "Institutional Equity Trading: What is Next? & What Is Needed?," panel discussion, Cold Spring Hills, New York, May 9, 2003.

Baruch College Conference, "Coping With Institutional Order Flow," panel discussion, "Overcoming Resistance to Change," New York, April 29, 2003.

USC Lusk100 Annual Retreat, "Macroeconomic Implications of Securities Market Scandals," panel discussion, Santa Barbara, April 15, 2003.

Vanderbilt Conference on Corporate Behavior and Financial Markets, "Challenging Problems in Securities Market Structure," panel discussion, Nashville, April 11, 2003.

American Bar Association, Section of Antitrust Law, 51st Annual Spring Meeting, Financial Markets Committee, co-presented a 1½ hour session on "Antitrust Issues in Financial Market Regulation" with Commissioner Cynthia Glassman, Washington DC, April 4, 2003.

Association for Investment Management and Research Conference "Equity Trading: The Next Revolution," presented one-hour session, "Market Microstructure and the Regulation of Markets," Chicago, March 25, 2003.

NYSE-Stanford Joint Conference on Entrepreneurial Finance and Initial Public Offerings, Keynote dinner speaker, "Short-Selling restrictions," Half Moon Bay, CA, March 7, 2003.

National Economists Club, lunch speaker, "Access Fees and Exchange Competition," Washington, DC, January 23, 2003.

Washington Area Finance Association, Keynote lunch speaker, Catholic University, Washington, DC, November 22, 2002.

Maryland Financial Economics and Accounting Conference, pre-dinner speech, "Things That Shouldn't Matter," College Park, MD, November 15, 2002.

SEC Credit Rating Agency Hearings, Washington DC, November 15, 2002, moderated 1½ hour session on Credit Rating Agencies.

SEC Market Structure Hearings, Washington DC, October 29, 2002, and New York, November 12, 2002, moderated 1½ hour sessions on market structure.

Financial Management Association 2002 Finance Doctoral Seminar. Five senior academic colleagues and I spoke to 60 Ph.D. students from various universities about current research topics in Finance in our respective areas of specialization. We then critiqued dissertation proposals in our respective areas. San Antonio, October 16, 2002.

Securities Industry Association Conference on Market Structure, New York, Keynote lunch speaker. "Regulatory Challenges," June 7, 2002.

10th Conference on the Theories and Practices of Securities Markets, Kaohsiung, Taiwan, December 15-16, 2001. Keynote speaker. Presented "The Tension Between Consolidation and Fragmentation."

10th Conference on the Theories and Practices of Securities Markets, Kaohsiung, Taiwan, December 15-16, 2001. Presented 2-hour tutorial on "Measuring Liquidity."

NYSE Conference on *Practices and Concerns of Institutional Buy-Side Equities Desks*. Chaired panel on spreads and liquidity in the era of decimals, Palm Beach, Florida, December 7, 2001.

NYSE Conference on *Institutional Trading*. Chaired panel discussion on decimalization, Hawaii, February 16, 2001.

SEC Decimalization Roundtable, Washington DC, December 11 2000. Participated in a second half-day discussion with senior executives from exchanges and SEC on the expected effects of trading on pennies.

SEC Decimalization Roundtable, Washington DC, December 15, 1999. Participated in half-day discussion with senior executives from exchanges and SEC on the expected effects of trading on pennies.

NASD Academic Advisory Panel, Member, 1999-2001.

Security Traders Association Foundation Conference on *Critical Issues in Our Marketplaces*. Panel discussion on decimalization, Chicago, July 22, 1997.

Institutional Investor TraderForum Spring 1997 Conference. Panel discussion on decimalization, San Diego, May 17, 1997.

NYSE Conference on *Global Equity Issuance and Trading*. Panel discussion on decimalization, Cancun, May 9, 1997.

US Congress, House Committee on Commerce, Subcommittee on Finance and Hazardous Materials, Hearings on H.R. 1053: The Common Cents Stock Pricing Act of 1997. Testified on decimalization, Washington, DC, April 16, 1997.

Center for the Strategic & International Studies, Global Financial Policy Forum, Markets in the 21st Century." Participated in day-long round-table discussion with senior executives from financial exchanges, broker-dealers, regulators, and Congress, Washington DC, April 15, 1997.

Financial Management Association 1996 Finance Doctoral Seminar. Five senior academic colleagues and I spoke to 60 Ph.D. students from various universities about current research topics in Finance in our respective areas of specialization. We then critiqued dissertation proposals in our respective areas. New Orleans, October 9, 1996.

Association for Investment Management and Research Committee on Research and Education, Member, 1993-2001.

German Research Foundation Symposium on the Design of Financial Markets. Presented Keynote speech "Seemingly Trivial, Clearly Important: The Importance of the Minimum Price Variation" to conference of 60 German academics, Nuremberg, September 29, 1995.

Conference on Neural Networks in the Capital Markets. Presented introductory tutorial titled "Dynamics of Trading and Market Microstructure," to 180 participants, November 16, 1994.

Ontario Securities Commission, Conference on Proprietary Trading Systems. Delivered the after lunch address to 300 participants, June 29, 1994.

Shadow SEC, second meeting. Spoke on the Treasury bill auction mechanism, Washington, DC, November 1, 1991

Financial Management Association 1991 Finance Doctoral Seminar. Led session on Market Microstructure and critiqued dissertation proposals. Chicago, October 9, 1991.

Member, Academic Advisory Board to the Pacific Stock Exchange, Fall 1991 – Spring 1993.

Shadow SEC, first meeting. Spoke on program trading and on new cash index alternatives. Washington, DC, November 8, 1990.

Investment Management Institute Conference on Profitable Strategies for Trading. Spoke on basket and program trading. New York, February 7, 1990.

LSE Financial Markets Group and New York Stock Exchange, Inc. Academic Seminar. A meeting of senior British economists, regulators and exchange officials to discuss issues in market structure. London, November 14-15, 1989.

Law and Economics Conference, George Mason University Law School. A two week survey of law for economics professors. Hanover, New Hampshire, June 25 -- July 8, 1989.

Rodney L. White Seminar, "Trading Baskets of Securities." Provided the conference summary, discussed various cash index alternatives. The Wharton School, Philadelphia, May 1, 1989.

New York Stock Exchange Academic Conference. A meeting of senior economists and exchange officials to discuss research issues of mutual interest. New York, May 5, 1989.

New York Stock Exchange 1989 Off-Site Environmental Scan. "Prospects for the U.S. Securities Industry." An after lunch speech to the top 35 officers and managers of the NYSE. New York, January 12, 1989.

Standard and Poors Corporation. "Addition Procedures for the S&P 500 List." A policy alternatives presentation to top officers and managers; recommendations subsequently adopted. New York, December 12, 1988.

Curry Foundation congressional briefing. Presentation of the theses of the Curry Foundation Public Policy Project on Vulnerabilities in the U.S. Economy to several congressmen and their staff. Washington, DC, September 23, 1988.

American Stock Exchange. "The Economics of Cash Index Alternatives." An over lunch presentation to top officers and managers. New York, July 20, 1988.

New York Stock Exchange Academic Round Table Seminar. A one-day round table discussion among 12 invited economists and senior officers and managers of the NYSE about the October 1987 Crash. New York, December 11, 1987.

Course Preparations

Advanced Practicum in Investment Management for undergraduate students
Trading and Exchanges (Market Microstructure) for MBA and undergraduate students
Seminar in Research Methods in Finance for Ph.D. students
Business Economics for MBA students
Financial Management for MBA students
Intermediate Business Economics for undergraduate students
Intermediate Finance for undergraduate students
Introduction to Finance for undergraduate students

Ph.D. Student Dissertation Chairmanships

Jia Ye, "Market Fragmentation and Crossing Markets," USC, May 1995.
Venkatesh Panchapagesan, "Time Precedence Rules," USC, Fall, 1999.

Notable Teaching Contracts

University of Western Australia School of Commerce, Perth, 15 hour course in market microstructure for honors students, February 18 -- March 18, 1994.

Berkeley Program in Finance, 5 hour conference instructional session on liquidity for practitioners, Squaw Valley, March 14, 1993.

Swedish School of Economics and Business Administration, Helsinki, 15 hour course in market microstructure for Ph.D. students, October 29, 1992 -- November 5, 1992.

Notable Consulting Relationships

American Stock Exchange	business consulting
AtomicTangerine	litigation support
Bear Stearns	business consulting
Bridge Information Systems, Inc.	educational program
Cantor Fitzgerald	litigation support
Charles River Associates	litigation support
Chicago Board Options Exchange	regulatory support
Cornerstone Research	litigation support
Davidge Data Systems	business consulting
Driehaus Securities	business consulting
Fidelity National Financial Markets	litigation consulting
FT Interactive Data Corporation	business consulting
Gibson, Dunn & Crutcher	litigation support
GE/Trinity	litigation support
Gordon, Arata, McCollam & Duplantis	litigation support
Hull Trading Co.	business consulting
ITG, Inc.	educational program
Jefferies Group, Inc .	educational program
Jones Trading	educational program
Kirkland & Ellis	litigation support
Knight Capital Markets	regulatory support
Lehman Brothers	educational program
LG Electronics	educational program.
Mackall, Crounse & Moore	litigation support
Morgan, Lewis & Bockius	litigation support
Milberg Weiss	litigation support
Morrison & Foerster	litigation support
N/E/R/A	litigation support
New York Stock Exchange, Inc.	business consulting
Plexus Group	business consulting
Prudential Securities	business consulting
Prudential QMA	litigation support
Securities and Exchange Commission	litigation support
Shearman and Sterling	litigation support
SRI Consulting	regulatory support
UnitedHealth	litigation support
U.S. Department of Justice	litigation support

Significant University Service

Inside Member, USC Economics Department Visiting Committee, University Committee on Academic Reviews, October 2010.
Executive Director, Center for Investment Studies, Marshall School of Business, August 2007-July 2010.
Chairman, Special Committee on Undergraduate Curriculum, Marshall School of Business, 2008.
Member, Strategic Planning Committee, Marshall School of Business, 2004-5.
Chairman, Marshall School of Business Personnel Committee, 1997-99.
Member, Dean's Faculty Advisory Committee, Marshall School of Business, 1997-99.
Member, Task force on Faculty Quality of Life, Marshall School of Business, 1997-98.
Member, Marshall School of Business Personnel Committee, 1996-99.
Chairman, Advisory Committee on Information Resources, Marshall School of Business, 1997.
Member, University Committee on Appointments, Tenure and Promotions, 1994-96.

Student Fellowships and Honors

Cargill Foundation Dissertation Fellowship
University of Chicago Graduate Fellowship
Phi Beta Kappa
University of California Alumni Award
Beta Gamma Sigma

Research Presentations

"Regulatory Issues Associated with Fast Electronic Markets"

Israel Securities Authority, Jerusalem, Israel, November 21, 2013.
Ono College Faculty Seminar, Kiryat Ono, Israel, November 19, 2013.

"Maker-Taker Pricing Effects on Market Quotations"

Southern California Quant Network, Los Angeles, January 16, 2014.
Tel-Aviv University, Ramat Aviv, Israel, November 26, 2013.
Hebrew University, Jerusalem, Israel, November 20, 2013.
USC Marshall Finance and Business Economics Brown Bag Seminar, September 18, 2013.
London Quantitative Group, Oxford, England, September 9, 2013.

"Optimal Maintenance Strategies at California Gasoline Refiners"

USC Marshall Finance and Business Economics Brown Bag Seminar, December 19, 2012.

"The Homogenization of US Equity Markets"

Eighth Central Bank Workshop on the Microstructure of Financial Markets, Ottawa, October 25, 2012.
National Bureau of Economic Research, Market Microstructure Conference, Boston, December 16, 2011.
USC Marshall Finance and Business Economics Brown Bag Seminar, October 5, 2011.

"Regulated Exchanges: Dynamic Engines of Economic Growth"

World Federation of Exchanges General Assembly, Paris, October 13, 2010.

"Equity Trading in the 21st Century"

Bank of Canada, Toronto, December 15, 2010.
Market Microstructure: Confronting Many Viewpoints Conference (Keynote speaker), Paris, December 10, 2010.
Center for European Policy Studies, Brussels, October 14, 2010.
TradeTech West Conference, San Francisco, October 6, 2010.
London Quantitative Analysis Group, Cambridge, UK, September 14, 2010.
IIROC DeGroote Conference on Market Structure and Market Integrity, Toronto, June 18, 2010.
Opus Connect, Century City, CA, June 10, 2010.
University of Southern California Finance Research Seminar, May 3, 2010.
The Institute for Quantitative Analysis in Finance Research Seminar, Key Largo, FL, March 23, 2010.

"Corporate Bond Market Transparency and Transaction Costs"

Western Finance Association Meetings, Portland, OR, June 19, 2005.
Vanderbilt Financial Markets Research Center Conference, Nashville, May 19, 2005.
Barclays Global Investors Research Seminar, San Francisco, December 9, 2004.
Bank of Canada Fixed Income Workshop, Montreal, November 26, 2004.
Arizona State University Finance Seminar, October 29, 2004.
Emory University Finance Seminar, October 22, 2004.

Research Presentations

The Institute for Quantitative Analysis in Finance Research Seminar, La Quinta, CA, October 20, 2004.

"Secondary Trading Costs in Municipal Bond Market"

American Finance Association Meetings, Philadelphia, January 9, 2005.
12th Conference on the Theories and Practices of Securities Markets, Kaohsiung, Taiwan, December 17, 2004. Won the Fuh Hwa Bond Research Award for the best fixed income paper presented at the conference.
University of Southern California Finance Research Seminar, August 27, 2004.
University of Maryland, College Park, April 27, 2004.
Vanderbilt Financial Markets Research Center Conference on Exchange Governance and Securities Market Structure, Nashville, April 23, 2004.
Bank of Canada Workshop on Regulation, Transparency and the Quality of Fixed Income Markets, Ottawa, Ontario, February 11, 2004.
Securities and Exchange Commission, January 14, 2004.

"Specialist Profits and the Minimum Price Increment"

Hong Kong University of Science and Technology Finance Symposium, Hong Kong, December 13, 2004.
Vanderbilt Financial Markets Research Center Conference on Exchange Governance and Securities Market Structure, Nashville, April 23, 2004.
University of Southern California Finance Research Seminar, January 8, 2004.
Securities and Exchange Commission, September 17, 2003.
New York Stock Exchange, September 15, 2003.
New York University Finance Seminar, September 3, 2003.

"Why People Trade?"

CRA International, Dinner Seminar, San Francisco, March 1, 2007.
Charles River Associates, Dinner Seminar, Los Angeles, April 21, 2005.
Milken Institute Forum, Santa Monica, February 17, 2005.
Mellon Capital Management Advisory Forum, Pebble Beach, September 12, 2003.
Association for Investment Management and Research, 2003 Financial Analysts Seminar, Evanston, IL, August 7, 2003.
Canadian Securities Traders Association, Toronto, June 28, 2003.
Commodity Futures Trading Commission, Washington D.C., April 7, 2003.
The Institute for Quantitative Analysis in Finance Research Seminar, San Diego, October 8, 2002. (Won First Prize, Roger F. Murray Prize Competition.)
Los Angeles Quantitative Investment Association, Los Angeles, March 23, 2001.

"Floor versus Automated Trading Systems: A Survey of the Issues"

London School of Economics Financial Markets Group Conference, "Competition among Exchanges, London, May 18, 2000.

Research Presentations

"The Information-Content of the Limit Order Book: Evidence from NYSE Specialist Actions" (with Venkatesh Panchapagesan)

American Finance Association Meetings, Boston, January 5, 2000.
NYSE-JB Seminar Series, 1999
Notre Dame - NASDAQ Conference, 1999.
National Bureau of Economic Research, Market Microstructure Section Conference, 1999.

"Trading in Pennies: A Survey of the Issues"

London School of Economics Financial Markets Group Seminar, May 17, 2000.
UCLA Finance Conference, "Liquidity," Los Angeles, California, April 28, 2000.
NYSE Conference "U.S. Equity Markets in Transition," Scottsdale, Arizona, December 10, 1999

"Order Exposure and Parasitic Traders"

Deutsche Börse AG Symposium "Equity Market Structure for Large- and Mid-Cap Stocks," Frankfurt, December 12, 1997.

"Circuit Breakers and Program Trading Limits: What Have We Learned?"

Brookings-Wharton Conference on Financial Services, Washington, DC, October 30, 1997.
UC Davis Conference, "The October '87 Stock Crash Ten Years Later: Perspectives on the Causes and Consequences of Stock Market Volatility," Sacramento, October 18, 1997.

"Decimalization: A Review of the Arguments and Evidence"

The Institute for Quantitative Analysis in Finance Research Seminar, Scottsdale, Arizona, October 8, 1997.
Los Angeles Society of Financial Analysts, June 17, 1997.

"Does a Large Minimum Price Variation Encourage Order Display?"

University of Texas at Austin Finance Seminar, September 26, 1997.
Chicago Quantitative Alliance Fall Seminar, September 17, 1997.
University of Arizona Finance Seminar, September 12, 1997.
Indiana University Summer Finance Symposium, August 23, 1997.
Inquire-UK/Inquire-Europe/Q Group joint summer meetings, London, June 30, 1997.
Western Finance Association Meetings, June 19, 1997.
Los Angeles Society of Financial Analysts, June 17, 1997.
JFI Symposium on Asset Liquidity: The Role of Institutions and the Microstructure of Markets, St. Louis, June 6, 1997.
UCLA Finance Seminar, April 11, 1997.
New York University Finance Seminar, March 7, 1997.
Paris Bourse Conference, "Organization and Quality of Equity Markets," Paris, December 19, 1996.
Tel-Aviv University Finance Seminar, November 18, 1996.

"The Economics of Best Execution"

New York Stock Exchange Conference on the Search for the Best Price, March 9, 1996.

Research Presentations

"Optimal Dynamic Order Submission Strategies In Some Stylized Trading Problems"

University of California at Berkeley Finance Seminar, September 14, 1995.
University of California at Riverside Finance Seminar, May 26, 1995.
American Finance Association Meetings, Washington, DC, January 7, 1995
University of Utah Finance Seminar, November 29, 1994.
University of Iowa Finance Seminar, November 11, 1994.
Washington University Finance Seminar, April 15, 1994.
USC/UCLA/NYSE Conference on Market Microstructure, March 30, 1994.
Plexus Group Client Conference, San Diego, March 29, 1994.
Hong Kong University of Science and Technology Finance Seminar, January 28, 1994.
University of Southern California Finance Research Seminar, November 23, 1993.
University of Arizona Finance Seminar, November 22, 1993.

"The Winners and Losers of the Zero Sum Game: The Origins of Trading Profits, Price Efficiency and Market Liquidity"

Plexus Group Client Conference, Santa Monica, October 11, 1995.
Hong Kong University of Science and Technology Finance Seminar, February 7, 1994.
The Institute for Quantitative Analysis in Finance Research Seminar, Tampa, Florida, March 29, 1993.

"The ARMoD Alternative to ARCH-class Volatility Models"

University of Southern California Finance Research Seminar, March 9, 1993.
Amsterdam Institute of Finance Volatility Conference, November 20, 1992.

"Consolidation, Fragmentation, Segmentation and Regulation"

Milken Institute for Job & Capital Formation, December 5, 1994.
UCLA Industrial Organization Seminar, May 20, 1994.
University of Western Australia, March 11, 1994.
Berkeley Program in Finance, Squaw Valley, March 16, 1993.
Association for Investment Management and Research Conference, "Execution Techniques, True Trading Costs and the Micro Structure of Markets," Toronto, December 3, 1992.
London Business School, November 13, 1992.
London School of Economics, November 11, 1992.
Stockholm School of Economics, November 6, 1992.
Bank of Finland, Helsinki, November 3, 1992.
Plexus Group Client Conference, Los Angeles, October 1, 1992.
Securities and Exchange Commission, Washington, DC, June 9, 1992.
National Organization of Investment Professionals, New York, December 10, 1991.

Research Presentations

"Minimum Price Variations, Discrete Bid/Ask Spreads and Quotation Sizes"

University of Indiana Symposium on the Design of Securities and Markets, August 15, 1993.
UC Irvine Finance Seminar, May 13, 1993.
London Business School, November 12, 1992.
London School of Economics, November 11, 1992.
Bank of Finland, Helsinki, November 4, 1992.
INSEAD, Fontainebleau, France, October 28, 1992.
HEC, Jouy-En-Josas, France, October 22, 1992.
Western Finance Association Meetings, June 23, 1992.
Commodity Futures Trading Commission, Symposium on Screen-Based Trading Systems, Washington D.C., June 8, 1992.
University of Southern California, Economics Department Econometrics Seminar, April 21, 1992.
University of Southern California Finance Research Seminar, November 19, 1991.
University of Illinois Finance Seminar, October 8, 1991.

"Market Microstructure and Transitory Volatility"

Amsterdam Institute of Finance Volatility Conference, November 19, 1992.

"Market versus Limit Orders: The SuperDOT Evidence on Order Submission Strategy"

Berkeley Program in Finance, Squaw Valley, March 15, 1993.
Inquire EUROPE Conference, Paris, October 27, 1992.
USC/UCLA/NYSE Academic Seminar on Market Micro-Structure, Los Angeles, March 26, 1992.

"Liquidity, Trading Rules and Electronic Trading Systems."

Los Angeles Society of Financial Analysts, May 21, 1991.
Vanderbilt Conference on Securities Trading and Transactions Costs, Nashville, April 12, 1991.
The Institute for Quantitative Analysis in Finance Research Seminar, Ponte Vedra, Florida, March 25, 1991.
The Wharton Conference on Investment Management, Philadelphia, March 15, 1991.
Dartmouth University Tuck School of Business Finance Seminar, November 6, 1990.
University of Arizona Finance Seminar, October 17, 1990.
University of Southern California Finance Research Seminar, October 9, 1990.
New York Stock Exchange, August 23, 1990.
Securities and Exchange Commission, August 16, 1990.

"Program Trading and Intraday Volatility" (written with George Sofianos and Jim Shapiro).

The Institute for Quantitative Analysis in Finance Research Seminar, Tucson, Arizona, October 16, 1990.
Seminar on the Analysis of Security Prices, Center for Research in Security Prices, University of Chicago, May 4, 1990 (George Sofianos presenting).
Vanderbilt University Owen School of Management Finance Center Seminar on Market Volatility, April 1990, (George Sofianos presenting).
Conference on Holding and Trading Stock Index Risk: Market Innovations, Volatility and Public Policy, Center for the Study of Futures and Options Markets, Virginia Polytechnic Institute and State University, Washington DC, February 15, 1990.

Research Presentations

"Stock Price Clustering, Discreteness and Bid/Ask Spreads"

Seminar on the Analysis of Security Prices, Center for Research in Security Prices, University of Chicago, November 8, 1990.
Massachusetts Institute of Technology Sloan School of Business Finance Seminar, November 7, 1990.
Los Angeles Society of Financial Analysts, September 18, 1990.
New York University Finance Seminar, July 18, 1990.
Western Finance Association Meetings, June 18, 1990.
University of Rochester Finance Seminar, May 24, 1990.
University of Iowa, Center for the Study of Capital Markets, Conference on Market Micro-Structure, Iowa City, May 17, 1990.
Tel-Aviv University Finance Seminar, May 8, 1990.
Haifa University Finance Seminar, May 3, 1990.
Hebrew University Finance Seminar, May 2, 1990.
USC/UCLA/NYSE Academic Seminar on Market Micro-Structure, Los Angeles, April 19, 1990.
Columbia Finance Seminar, April 11, 1990.
Yale Finance Seminar, April 10, 1990.
UC Berkeley Finance Seminar, April 5, 1990.
Stanford University Finance Workshop, April 4, 1990.
University of Washington, February 9, 1990.
Securities and Exchange Commission, Washington D.C., February 2, 1990.
University of Minnesota Finance Seminar, January 30, 1990.
University of Pennsylvania Wharton School, January 11, 1990.
Rutgers University, Newark, Finance Seminar, November 21, 1989.

"The Economics of Cash Index Alternatives"

Conference on Holding and Trading Stock Index Risk: Market Innovations, Volatility and Public Policy, Center for the Study of Futures and Options Markets, Virginia Polytechnic Institute and State University, Washington DC, February 15, 1990.
New York Federal Reserve Bank Finance Seminar, January 5, 1990.
Seminar on the Analysis of Security Prices, Center for Research in Security Prices, University of Chicago, May 4, 1989.
AMEX Options Colloquium IX, New York, March 31, 1989.
National Bureau of Economic Research Conference on Stock Market Volatility, Puerto Rico, March 18, 1989.
Georgetown University Finance Seminar, February 24, 1989.
Securities and Exchange Commission, Washington D.C., July 21, 1988.

"The Dangers of Regulatory Overreaction to the October 1987 Crash"

University of Georgia Finance Seminar, December 2, 1988.
Cornell University Law Review Symposium, "The Regulation of Secondary Trading Markets: Program Trading, Volatility, Portfolio Insurance, and the Role of Specialists and Market Makers," November 12, 1988.

Research Presentations

"The October 1987 S&P 500 Stock-Futures Basis," formerly titled "Nonsynchronous Trading and the S&P 500 Stock-Futures Basis in October 1987"

University of Texas at Austin Finance Seminar, November 11, 1988.
Princeton University Finance Seminar, October 28, 1988.
Arizona State University Finance Seminar, September 9, 1988.
Western Finance Association Meetings, June 1988.
University of Southern California Finance Research Seminar, May 10, 1988.
University of Arizona Finance Seminar, April 15, 1988.
AMEX Options Colloquium VIII, New York, March 24, 1988.
The Crash: Causes and Cures?, A Joint UCLA-USC Conference, February 13, 1988.
New York University Finance Seminar, January 6, 1988.
Duke University Finance Seminar, January 5, 1988.
Securities and Exchange Commission, Washington D.C., January 4, 1988.
Commodity Futures Trading Commission, Washington D.C., December 31, 1987.

"S&P 500 Futures and Cash Stock Price Volatility"

American Finance Association National Meetings, December 30, 1988.
Securities and Exchange Commission, Washington D.C., October November 3, 1988.
Southern Methodist University Finance Seminar, November 13, 1987.
University of Iowa Finance Seminar, November 6, 1987.
The Institute for Quantitative Analysis in Finance Research Seminar, Colorado Springs, Colorado, October 19, 1987.
University of Southern California Finance Research Seminar, October 6, 1987.

"A Day-end Transaction Price Anomaly"

Western Finance Association Meetings, June 1987.
University of Southern California Finance Research Seminar, July 15, 1986.

"Estimating the Components of the Bid/Ask Spread" (written with Lawrence Glosten).

UCLA Finance Seminar, October 2, 1987.
Columbia Finance Seminar, September 17, 1987.
Carnegie-Mellon Finance Seminar, September 16, 1987.
UC Berkeley Finance Seminar, October 1, 1986.
University of Southern California Finance Research Seminar, September 9, 1986.
Western Finance Association Meetings, June 1986.
The Institute for Quantitative Analysis in Finance Research Seminar, Palm Beach Florida, April 30, 1986.
Seminar on the Analysis of Security Prices, Center for Research in Security Prices, University of Chicago, November 7, 1985.

Research Presentations

"Estimation of Stock Price Variances and Serial Covariances from Discrete Observations."

Western Finance Association Meetings, June 1986.
University of Utah, Department of Finance, May 13, 1986.
University of Pennsylvania Wharton School, January 17, 1986.
Yale Finance Seminar, January 15, 1986.
UCLA Finance Workshop, December 6, 1985.
University of Southern California Department of Economics, Econometrics Seminar, November 26, 1985.
New York University School of Business, November 14, 1985.
Vanderbilt University Owen School of Management, November 12, 1985.
Northwestern Kellogg School of Management, November 4, 1985.
University of Michigan Graduate School of Business Administration, November 1, 1985.
Cornell University Johnson School of Management, October 30, 1985.
University of Southern California Finance Research Seminar, September 17, 1985.

"Theory and Transaction Data Evidence on Price-Volume Relations in Call Markets and in Continuous Markets"

University of Southern California Finance Research Seminar, March 22, 1984.

"Price and Volume Effects Associated with Change in the S&P 500 List: New Evidence for the Existence of Price Pressures" (written with Eitan Gurel).

Western Finance Association Meetings, June 20, 1985.
Berkeley Symposium on Trading Costs and Trading Strategies, March 1985, (Eitan Gurel presenting).
University of Southern California Finance Research Seminar, January 22, 1985.

"Cross-security Tests of the Mixture of Distributions Hypothesis"

University of Southern California Finance Research Seminar, October 23, 1984.

"A Transactions Data Study of Weekly and Intradaily Patterns in Stock Prices"

Seminar on the Analysis of Security Prices, Center for Research in Security Prices, University of Chicago, November 1984.
Stanford University Finance Workshop, October 17, 1984.
UCLA Finance Workshop, May 18, 1984.
Conference on Issues in Transactions Data and Price/Volume Relationships, USC School of Business, April 26, 1984.
University of Southern California Finance Research Seminar, March 22, 1984.
UC Berkeley Finance Seminar, March 20, 1984.

"Transactions Data Tests of the Mixture of Distributions Hypothesis"

American Finance Association National Meetings, December 30, 1984.
Western Finance Association Meetings, June 1984.
University of Southern California Finance Research Seminar, August 1983.

Research Presentations

"The Joint Distribution of Speculative Prices and of Daily Trading Volume"

Western Finance Association Meetings, June 1983.
UC Santa Barbara Department of Economics, December 8, 1982.
University of Southern California Finance Research Seminar, October 10, 1982.
UC Berkeley Graduate School of Business, February 1982.
University of Southern California School of Business Administration, February 1982.
University of Michigan Department of Economics, February 1982.
Federal Reserve Board, Washington, January 1982.
Columbia School of Business, January 1982.
Carnegie-Mellon Graduate School of Industrial Administration, January 1982.
University of Chicago Graduate School of Business, November 1981.

Prior Expert Testimony, Last Four Years

Lawrence Harris

September 28, 2014

1. Lynn E. Gorguze et al. V. NSB Advisors LLC, American Arbitration Association Arb. No. 73 148 Y 00293 13. Hired by NSB to opine on whether respondents were given an order to sell and whether the quantity in question could be sold without significantly disrupting the markets. I testified at an arbitration hearing in May 2014. Complaints won the case on issues largely unrelated to my testimony.

2. SEC v. Mohammed Riad and Kevin Timothy Swanson, SEC Administrative Proceeding, File No. 3-15141. Hired by SEC to opine on whether how respondents managed a closed-end equity mutual fund. I delivered a report in March 2013 and testified at trial in April 2013. The SEC won the case on all counts.

3. SEC v. Middlecove Capital, LLC and Noah L. Myers, SEC Administrative Proceeding, File File No. 3-14993. Hired by SEC to opine on whether respondents cherry-picked trades for selective allocation to favored accounts. I delivered a report in November 2012 and the case was settled before trial in the SEC's favor.

4. SEC v. optionsXpress, Inc., Thomas E. Stern, and Jonathan I. Feldman, SEC Administrative Proceeding, File No. 3-14848. Hired by SEC to opine on certain options trading strategies used to circumvent Reg. SHO. I delivered a report in August 2012 and testified at trial in September and October 2012. The case was decided in the SEC's favor.

5. SEC v. Southridge Capital Management LLC, Southridge Advisors LLC, and Stephen M. Hicks, Civil Action No. 3:10-cv-01685. Hired by SEC to opine on the values of certain securities held by several hedge funds. I delivered a report in June 2012 and provided a deposition in September 2012. The case has not yet gone to trial.

6. SEC v. James Tambone and Robert Hussey, Civil Action No. 06-10885 NMG. Hired by SEC to opine on ill-gotten gains associated with market timing. I delivered reports in October and November 2011 and was deposed in January 2012. The case was decided in the SEC's favor.

7. In the matter of Certain Trades in Municipal GIC Contracts. Hired by GE/Trinity to opine on liability and ill-gotten gains associated with potential bid-rigging behaviors involving certain trades in municipal guaranteed investment contracts (GICs). I made oral presentations with supporting documentation to SEC Philadelphia office enforcement staff in June and October 2011. The case was settled with awarded damages that reflected the actual behavior and its consequences and not those initially alleged by the SEC.

8. SEC v. Pentagon Capital Management PLC and Lewis Chester, defendants, and Pentagon Special Purpose Fund, Ltd., relief defendant, Civil Action No. 08-CV-3324 (RWS). Hired

by SEC to opine on ill-gotten gains associated with market timing by the defendants. I delivered a report and testified at trial in April 2011. The case was decided in the SEC's favor.

9. US v. Sandra Hatfield and David H. Brooks, Case 2:06-cr-00550-JS. Hired by US to opine on price inflation at time of insider trading in the penalty phase following felony convictions. Testified in Court in November, 2010 and December 2011. The case was decided in the government's favor, and significant penalties were accessed.

List of Materials Consulted

Data

1. Penson Daily SIAC 12 CNS Reports
2. Penson Daily Trade Blotter
3. Penson Stock Loan Department Daily Records of Outstanding Stock Loans

Documents

4. Order Instituting Proceedings, No. 3-15873
5. Cooperation Agreement, Brian David Hall, September 13, 2013
6. Letter to Jonathan Warner from Michael MacPhail, March 13, 2012, conveying responses to requests for analyses, in file "3-13-2012 Transmittal to SEC.PDF"
7. Attachment A to the letter to Jonathan Warner from Michael MacPhail, March 13, 2012, in file "SEC Section I Results.pdf"
8. Attachment B to the letter to Jonathan Warner from Michael MacPhail, March 13, 2012, in file "Attachment B to 3-12-12 letter to SEC (I.D. spreadsheet).pdf"
9. Letter to Jonathan Warner from Michael MacPhail, August 9, 2012, conveying financial data about Penson revenues, in file "8-09-12 Transmittal Letter re Financial Information.pdf"
10. Attachment to Letter to Jonathan Warner from Michael MacPhail, August 9, 2012, Excel workbook in file "SEC Results III.XLSX"